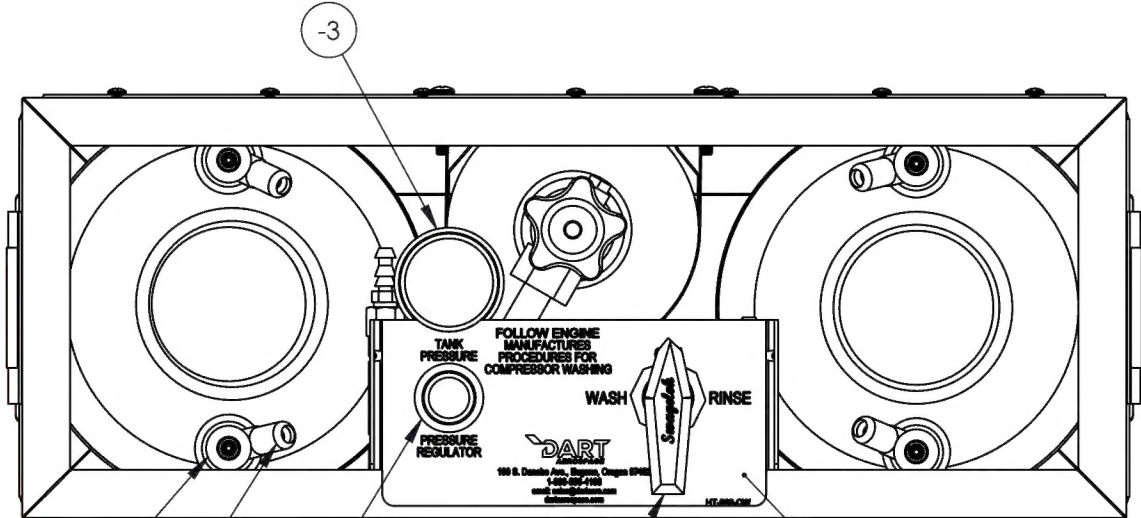
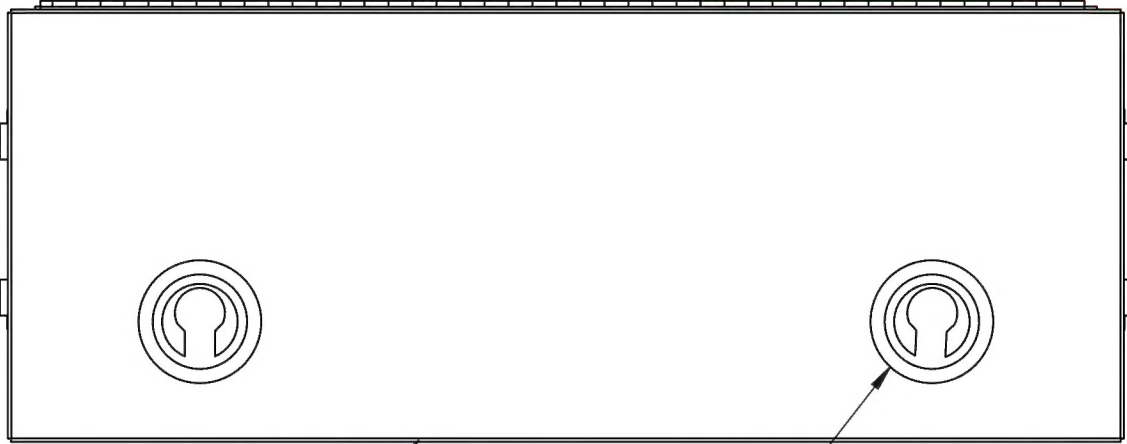
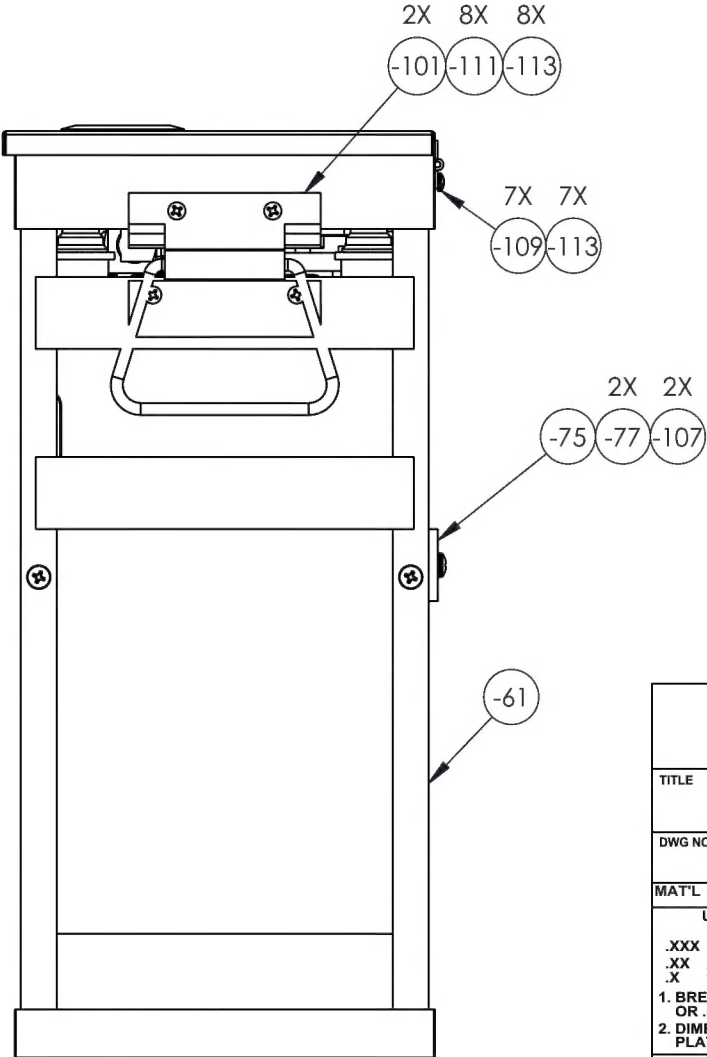
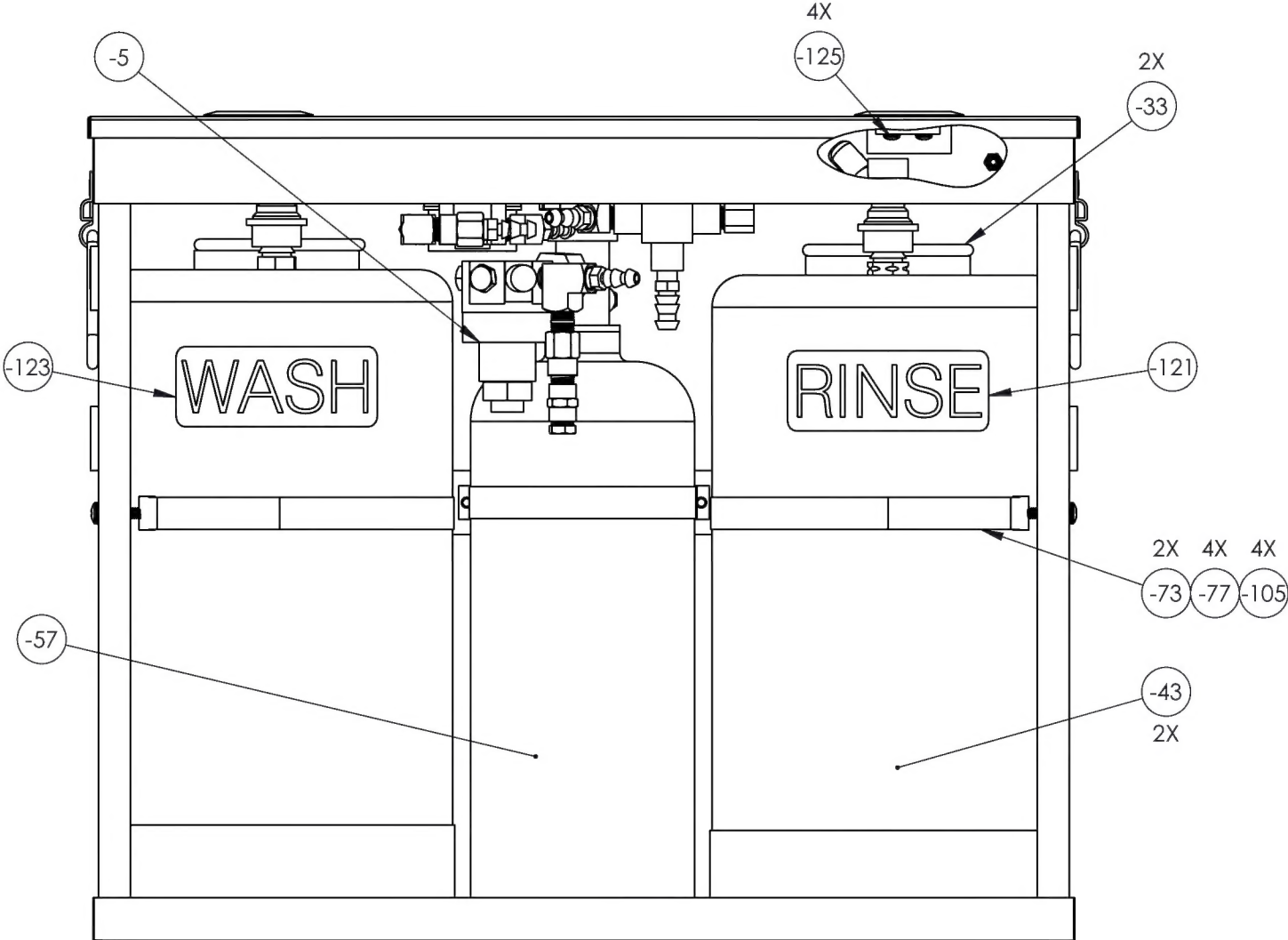



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SEE ATTACHED DEVIATION



TOP VIEW WITHOUT LID ASSY.



		
TITLE ENGINE WASHER		
DWG NO. HT-300-CW		REV 6
MAT'L	DRAWN BY: CLOUGH	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		APPROVED <i>D. Well</i>
.XXX ± .005	FRACTIONS ± 1/8	REVIEW
.XX ± .01	ANGLES ± .5°	TREAT
.X ± .1		FINISH
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R		SPEC
2. DIMENSIONAL LIMITS APPLY AFTER PLATING		USED ON MODEL
SCALE 1:4	DATE 10/15/2014	SHEET 1 OF 29


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SEE ATTACHED DEVIATION

ASSY QTY	ASSY QTY	ASSY QTY	B/O	Part #	UNIT QTY	Description	Material	B/O INFORMATION OR SPECIFICATIONS	PG.
			B/O	-1	1	WHITNEY 3-WAY BALL VALVE		NORTHWEST FLUID #B-44XF4	1, 3
			B/O	-3	1	DRY PRESSURE GUAGE 1/8in. BOTTOM MOUNT		2in. 100psi MAX   PARAMOUNT SUPPLY #0529826	1, 3
			B/O	-5	1	GAS CYLINDER REGULATOR		FOXX EQUIP. NORGREN #03G07126	3
			B/O	-7	3	MALE TO FEMALE CHECK VALVE	BRASS	1/4 in.   AOP TECH. #410-4M4F-B	3
			B/O	-9	1	REGULATOR	METAL	1/4 in. ARROW SUPPLY #R-162	3
			B/O	-10	1	RING	PLASTIC	ARROW SUPPLY #PK1611 (FOR -9 REGULATOR)	3
			B/O	-11	2	90° ELBOW	BRASS	1/4 in.   PACIFIC RUBBER #PAR2202P-4-4	3
			B/O	-13	1	CLOSE NIPPLE	BRASS	1/4 in.   PACIFIC RUBBER #PAR215PNP-4	3
			B/O	-15	1	LIGHT COUPLING	BRASS	1/4 in.   PACIFIC RUBBER #PAR207P-4	3
			B/O	-17	1	RUN TEE	BRASS	1/4 in.   PACIFIC RUBBER #PAR2225P-4	3
			B/O	-19	1	MALE BRANCH TEE	BRASS	1/4 in.   PACIFIC RUBBER #PAR2224P-4	3
			B/O	-21	2	45° ST ELBOW	BRASS	1/4 in.   PACIFIC RUBBER #PAR2214P-4-4	3
			B/O	-23	1	HEX HEAD PLUG	BRASS	1/4 NPT   PACIFIC RUBBER #PAR218P-2	3
			B/O	-25	4	HEX HEAD PLUG	BRASS	#6 MALE JIC   PACIFIC RUBBER #PAR218P-4	3
			B/O	-27	6	MALE PUSH LOCK ADAPTER	BRASS	1/4 X 1/4   PACIFIC RUBBER #NWH PM4-4	3
			B/O	-29	1	MALE PUSH LOCK ADAPTER	BRASS	3/8 X 1/4   PACIFIC RUBBER #NWH PM6-4	3
			B/O	-31	1	CO2 INLET NIPPLE	BRASS	1/4 NPT MALE X 2 in.   AIRGAS #CGA-320	3
			B/O	-33	2	TANK CAP O-RING	RUBBER	AOP TECH VITON #5-797V884-75 FOR TRANS FLUID	1
			B/O	-35	4	O-RING	RUBBER	VITON   CHRISTOPHER SEALS #V75-007	5
			B/O	-37	4	O-RING	RUBBER	VITON   CHRISTOPHER SEALS #V75-008	4
			B/O	-39	4	O-RING	RUBBER	VITON   CHRISTOPHER SEALS #V75-111	5
			B/O	-41	4	O-RING	RUBBER	VITON   #V75-013	4
			B/O	-43	2	3 GAL FLUID TANK	S.S	TOMARK #2974B, CONF. WJ/#39567P	1
			B/O	-45	2	WHITE QUICK DISCONNECT		FOXX EQUIPMENT #07C07-138	1, 4
			B/O	-47	2	BLACK QUICK DISCONNECT		FOXX EQUIPMENT #07C07139	1, 4
			B/O	-49	4	FERRULE, OVER 1/4 LOLA @ DISCONNECTS	S.S.	FOXX EQUIPMENT #06E04-147	1
			B/O	-51	1	DIP TUBE (FOR 3 GAL. TANK)	S.S.	TOMARK INDUSTRIES #39327	5
			B/O	-53	1	GAT4LOLA HOSE		Ø1/4 ID X 3-1/2 ft   PACIFIC RUBBER #3284-2501	
			B/O	-55	1	GAT6LOLA HOSE		Ø3/8 ID X 15 ft   PACIFIC RUBBER #3284-1101	
			B/O	-57	1	CO2 TANK #5 EMPTY	ALUMINUM	FOXX EQUIP. #01F05103	1
			B/O	-59	4	O-RING	RUBBER	VITON   CHRISTOPHER SEALS #V75-109	5
		X		-61	1	WELDED FRAME ASSEMBLY			6
		1		-63		CONTROL PANEL	5052	.080 X 4 X 11-1/4	7
		2		-65		LID LATCH MOUNT	6061	1/4 X 3/4 X 1-5/8	8
				-67	1	CONTROL PANEL PLAQUE	PLASTIC	1/16 X 4 X 8   MULTI-CRAFT PLASTICS #LM922402	9
	X			68	1	LID ASSEMBLY			10
X	1			68A		LID WELDMENT			11
1				-69		LID	BRUSHED S.S. 304-4B	.036 X 10 X 24-1/4	12
4				-70		CORNER CLIP	BRUSHED S.S. 304-4B	.036 X 3/8 X 1-1/4	13
	1			-71		LID HINGE	S.S.	1in. FLAT X 21-3/4   R&S INDUSTRIAL SUPPLIES	10
				-73	2	TANK STRAP	S.S	.030 X 3/4 X 25-1/4   PACIFIC RUBBER #BANC206	14
				-75	1	CO2 CYLINDER STRAP	S.S	.030 X 3/4 X 18-1/2   PACIFIC RUBBEER #BANC206	15
			B/O	-77	6	BARREL NUT	STEEL	1/4-20 X .786   J&S #JCD14202010	1
	2			-81		TOP SIDE RAILS	6063 ARCH.	1/8 X 1 X 2 X 8-7/8	16
	1			-83		BACK TOP RAIL	6063 ARCH.	1/8 X 1 X 2 X 23	17
	1			-85		FRONT TOP RAIL	6063 ARCH.	1/8 X 1 X 2 X 23	18
	4			-87		VERTICLE SUPPORTS	6061 SQ. CORNER	1/8 X 3/4 X 3/4 X 19-1/8	19
	2			-89		BOTTOM FRONT AND BACK RAILS	6063 ARCH.	1/8 X 1 X 2 X 23	20
	2			-91		BOTTOM SIDE RAILS	6063 ARCH.	1/8 X 1 X 2 X 8-3/4	21
	2			-93		BOTTOM PLATES	6061	1/8 X 2 X 4-3/4	22
	4			-96		SIDE BARS	6061	3/16 X 1-1/2 X 8	24
	1			-99		BACK BAR	6061	3/16 X 1-1/2 X 22-1/4	25
			B/O	-101	2	CHEST HANDLE	STEEL	ESSENTRA #NSH-220	1
			B/O	-103	2	TOP FLUSH PULL LATCH	PLASTIC	ICO RALLY, (SOUTHCO #M1-61)	1
			B/O	-105	4	PAN HEAD MACHINE SCREW	S.S.	1/4 X 20 X 1-1/2   MCMASTER-CARR #91735A546	1
			B/O	-107	2	PAN HEAD MACHINE SCREW	S.S.	1/4-20 X 1-1/4   MCMASTER-CARR #91735A544	1
ASSY -68A	ASSY -68	ASSY -61							

REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
1		LID LENGTHENED BY 1/16 TO ALLOW FOR ADEQUATE CLEARANCE .	3/5/02		
2		MERGED SIX FILES INTO ONE. INSTALLED NEW BOM & REVISION LOG. RE-FORMATTED ENTIRE FILE. ADDED Pg. 1, 6, 7 & 10. ALSO ADDED -68 LID ASSEMBLY, AND SEVERAL MISSING ITEMS. DELETED -97 FOR TWO MORE -95.	11/7/07	WP	RW
3		ADDED WASH & RINSE LABEL DWG.'S.	12/27/07	WP	RW
4		CH'D HANDLE HOLE POSITION -95 TO MATCH NEW HANDLES. OLD HANDLES ARE UNAVAILABLE.	4/26/10	WP	RW
4A		CH'D BOM INFORMATION FOR -3, -33, & -103 PER B.R.	9/3/10	RJC	RW
4B		REPLACED -9 FROM ARROW #R-162; W/#PK1611 NUT PER R.W.	1/17/12	RJC	RW
5		-81 CH'D HANDLE NOTE FROM 1.870 TO 1.75 MUST MATCH HANDLES -101. CH'D HOLE LOCATIONS FROM .43 TO .375. REPLACED LOWER -95 W/O HOLES WITH 2 -96 TO BOM & DELETED 2 -95. -95 CH'D HOLE LOCATIONS FROM .435 TO .375 & 2.750 TO 3.00. ADDED MISSING Ø.234 DIM.	2/7/13	RJC	GE
5A		CH'D TITLEBLOCK FROM HELI TECH TO RED BARN. CH'D PLACARD FROM HELI TECH TO DART AREOSPACE.	9/5/13	RJC	RW
6	14-0161	CH'D B/O INFO -33 P/N WAS V0884 5-979 IS VITON #5-979V884-75. -49 P/N WAS F-475-A IS 06E04-147. -53 CH'D B/O INFO WAS LOLA HOSE IS GAT4 LOLA HOSE & ADDED P/N PACIFIC RUBBER #3284-250. -55 CH'D B/O INFO WAS LOLA HOSE IS GAT6 LOLA HOSE & ADDED P/N PACIFIC RUBBER #3284-1101. -67 CH'D MATERIAL LENGTH WAS 1-1/2 IS 1-5/8. -69 & -70 CH'D MATERIAL WAS .034 IS .036. -70 CH'D QTY WAS 1 IS 4. -73 CH'D DESCRIPTION WAS TANK STRAPPING IS TANK STRAP. -75 CH'D DESCRIPTION WAS CYLINDER STRAPPING IS CO2 CYLINDER STRAP. -77 ADDED P/N J&S #14202010. -81, -83, -85, -87, -89, -91 CH'D MATERIAL WAS 6061 IS 6063 ARCHITECTURAL. -81 CH'D LENGTH WAS 8-3/4 IS 8-7/8. -87 CH'D LENGTH WAS 19 IS 19-1/8. -96 CH'D LENGTH WAS 8-1/8 IS 8, AND CH'D QTY WAS 2 IS 4 (SEE REV 5). -99 CH'D LENGTH WAS 22-1/8 IS 22-1/4. -101 CH'D VENDOR WAS REID IS ESSENTRA. -117 DELETED AND ADDED ONE MORE -25 FOR TOTAL OF 4. -118 CH'D P/N WAS 6JT61 IS 24A686. -119 CH'D PLACARD FROM HELITECH TO DART RB41011. -125 CH'D FROM STEEL TO S.S. ADDED SEPARATE SHEETS 4 & 5 TO SHOW MODIFICATIONS. -61 ADDED DRILL HOLES AFTER WELDING TO MATCH -101 AND DELETED DIMS FOR HOLE PLACEMENT. -67 ADDED EMAIL TO EMAIL ADDRESS. -68A ADDED LID WELDMENT DWG. -69 & -70 CH'D DIM WAS .034 IS .036. -75 CH'D DESCRIPTION WAS CYLINDER STRAPPING IS CO2 CYLINDER STRAP. -81 REMOVED Ø.234 HOLES AND MOVED TO -61 CH'D HOLE DIA. TO .221. -87 CH'D HOLE WAS Ø.312 IS .281. -95 REMOVED Ø.234 HOLES AND ADDED TO -61 CH'D DIA TO .221. -99 CH'D HOLE WAS 2X Ø.312 IS 2X Ø.281.	10/27/2014	RJC	JAG

ASSY QTY	ASSY QTY	ASSY QTY	B/O	Part #	UNIT QTY	Description	Material	B/O INFORMATION OR SPECIFICATIONS	PG.
			B/O	-109	7	PAN HEAD MACHINE SCREW	S.S.	#10-24 X 1/2   MCMASTER-CARR #91735A242	1
			B/O	-111	8	FLAT HEAD MACHINE SCREW	S.S.	#10-24 X 5/8   MCMASTER-CARR #91771A244	1
			B/O	-113	15	NYLON LOCK NUT	S.S.	#10-24   MC MASTER-CARR #90715A011	1
			B/O	-115	1	ENG. HOSE END FITTING	BRASS	FEM. JIC 37° SWIVEL   PACIFIC RUBBER #NWHJF6-6	1
			B/O	-118	1	DOUBLE SIDED TAPE (FOR -67)	POLYPROPLENE	4mil X 1   GRAINGER #24A686	1
	1		B/O	-119		DART PLACARD	ALUMINUM	#RB41011	10
			B/O	-121	1	RINSE LABEL	PLASTIC	SIGNS NOW	26
			B/O	-123	1	WASH LABEL	PLASTIC	SIGNS NOW	27
			B/O	-125	4	PAN HEAD MACHINE SCREW	S.S.	10-24 X 1/4   MCMASTER-CARR #91772A238	1
ASSY -68A	ASSY -68	ASSY -61							



TITLE

ENGINE WASHER

DWG NO.

HT-300-CW

REV

6

MAT'L

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

APPROVED

CLOUGH

.XXX ± .005 FRACTIONS ± 1/8

HEAT TREAT

.XX ± .01 ANGLES ± 5°

FINISH

.X ± .1

SPEC

1. BREAK ALL SHARP EDGES .015 x 45° OR .015R

2. DIMENSIONAL LIMITS APPLY AFTER PLATING

USED ON MODEL

SCALE

1:4

DATE

10/15/2014

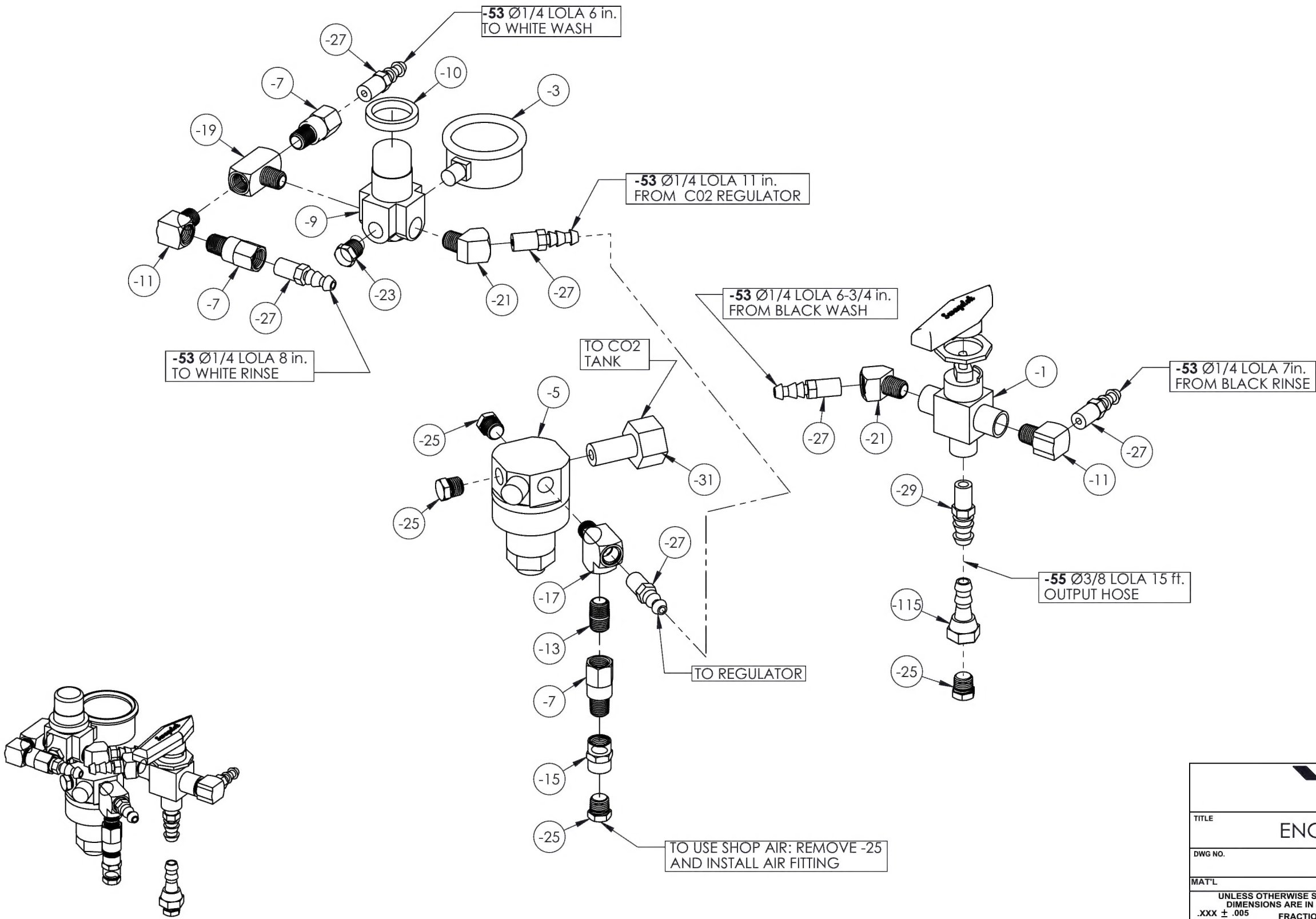
SHEET 2 OF 29



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REVISIONS				
REV	ECR	DESCRIPTION	DATE	INITIAL
6	14-0161	-117 DELETED AND ADDED ONE MORE -25.	10/27/2014	RJC

SEE ATTACHED DEVIATION

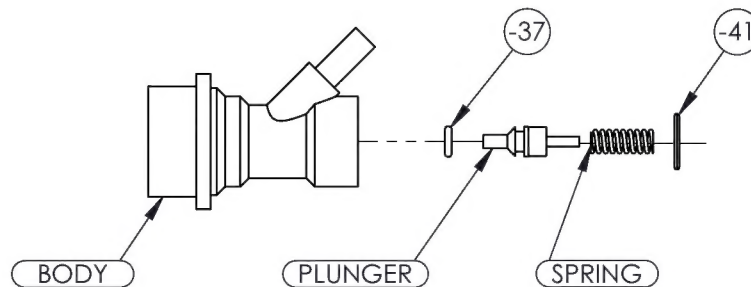
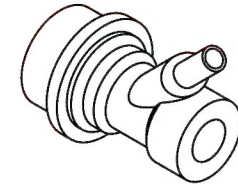


DART AEROSPACE			
TITLE		ENGINE WASHER	
DWG NO.		HT-300-CW	REV 6
MATERIAL		DRAWN BY: CLOUGH	APPROVED: D Weil
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		TREAT	
.XXX ± .005		FINISH	
.XX ± .01		SPEC	
.X ± .1		USED ON MODEL	
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R			
2. DIMENSIONAL LIMITS APPLY AFTER PLATING			
SCALE	1:3	DATE	10/15/2014
		SHEET 3 OF 29	

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REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
6	14-0161	ADDED SEPARATE SHEET TO SHOW MODIFICATION.	10/27/2014	RJC	JAG

**SEE ATTACHED DEVIATION**



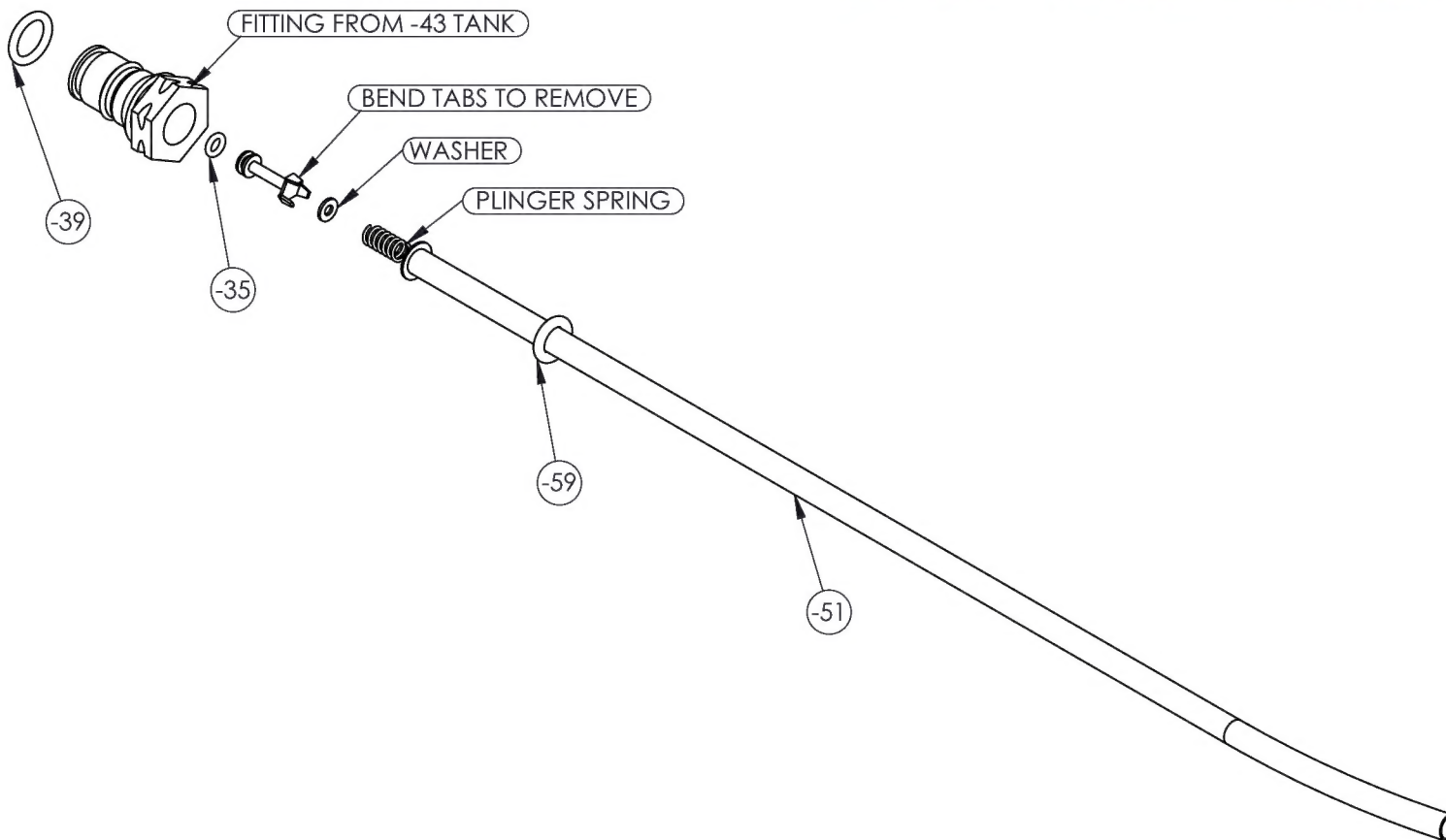
**-43 TANK FITTING MODIFICATIONS**  
-45 WHITE AIR INTAKE QUICK DISCONNECT  
-47 BLACK FLUID OUT QUICK DISCONNECT

<b>DART AEROSPACE</b>	
TITLE <b>ENGINE WASHER</b>	
DWG NO. <b>HT-300-CW</b>	REV <b>6</b>
MAT'L	DRAWN BY: <b>NELSON</b>
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	APPROVED <i>D Weil</i>
.XXX ± .005	HEAT
.XX ± .01	TREAT
.X ± .1	FINISH
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R	SPEC
2. DIMENSIONAL LIMITS APPLY AFTER PLATING	USED ON MODEL
SCALE 1:2	DATE 7/15/2014
SHEET 4 OF 29	

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REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
6	14-0161	ADDED SEPARATE SHEET TO SHOW MODIFICATION.	10/27/2014	RJC	JAG

**SEE ATTACHED DEVIATION**



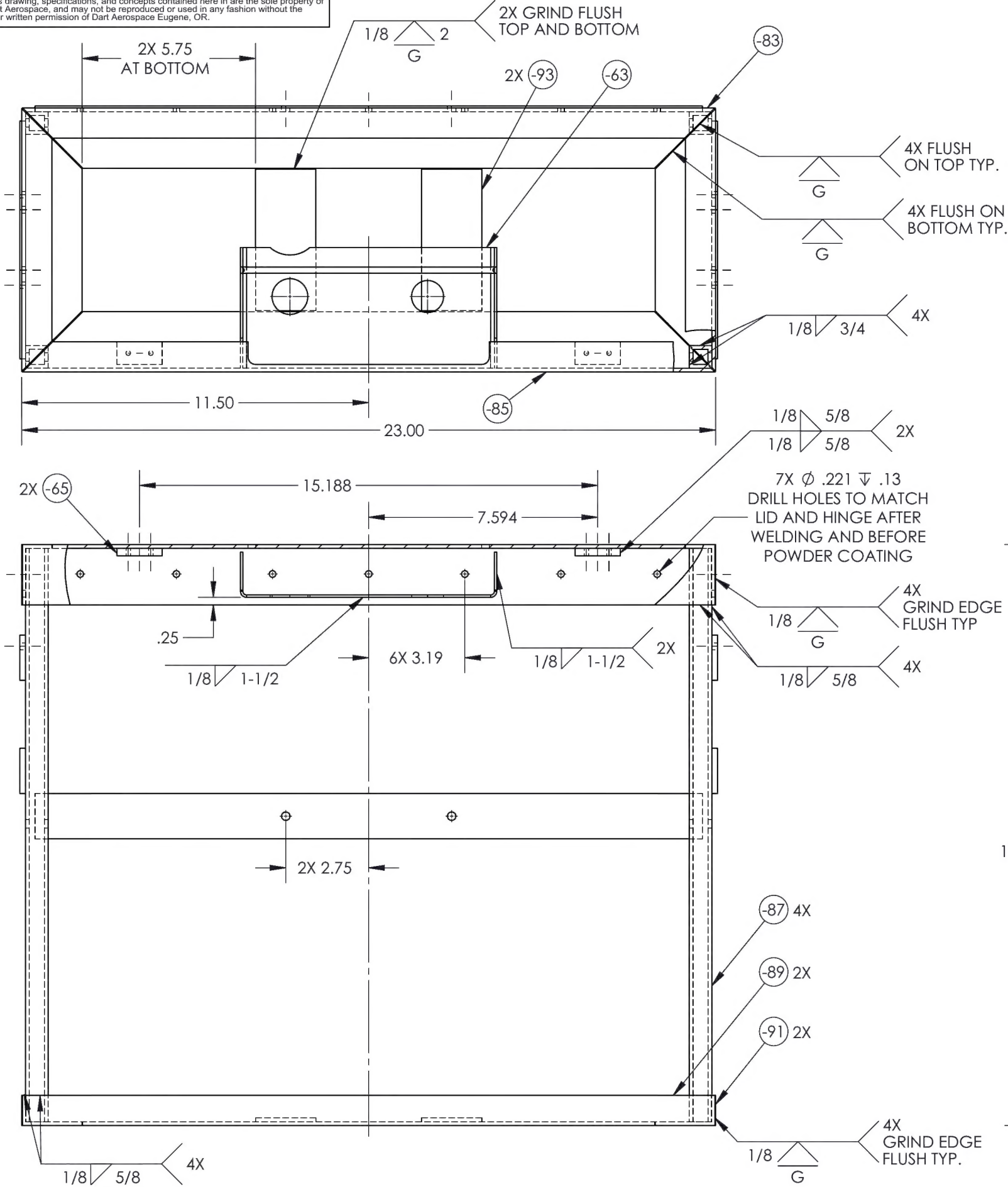
REPLACE SHORT TUBE WITH -51 DIP  
TUBE IN WASH TANK ONLY INLET SIDE.

<b>DART AEROSPACE</b>	
TITLE <b>ENGINE WASHER</b>	
DWG NO. <b>HT-300-CW</b>	REV <b>6</b>
MAT'L	DRAWN BY: <b>CLOUGH</b>
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	APPROVED <i>D Weil</i>
.XXX ± .005	HEAT
.XX ± .01	TREAT
.X ± .1	FINISH
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R	SPEC
2. DIMENSIONAL LIMITS APPLY AFTER PLATING	USED ON MODEL
SCALE 1:2	DATE 10/27/2014
SHEET 5 OF 29	

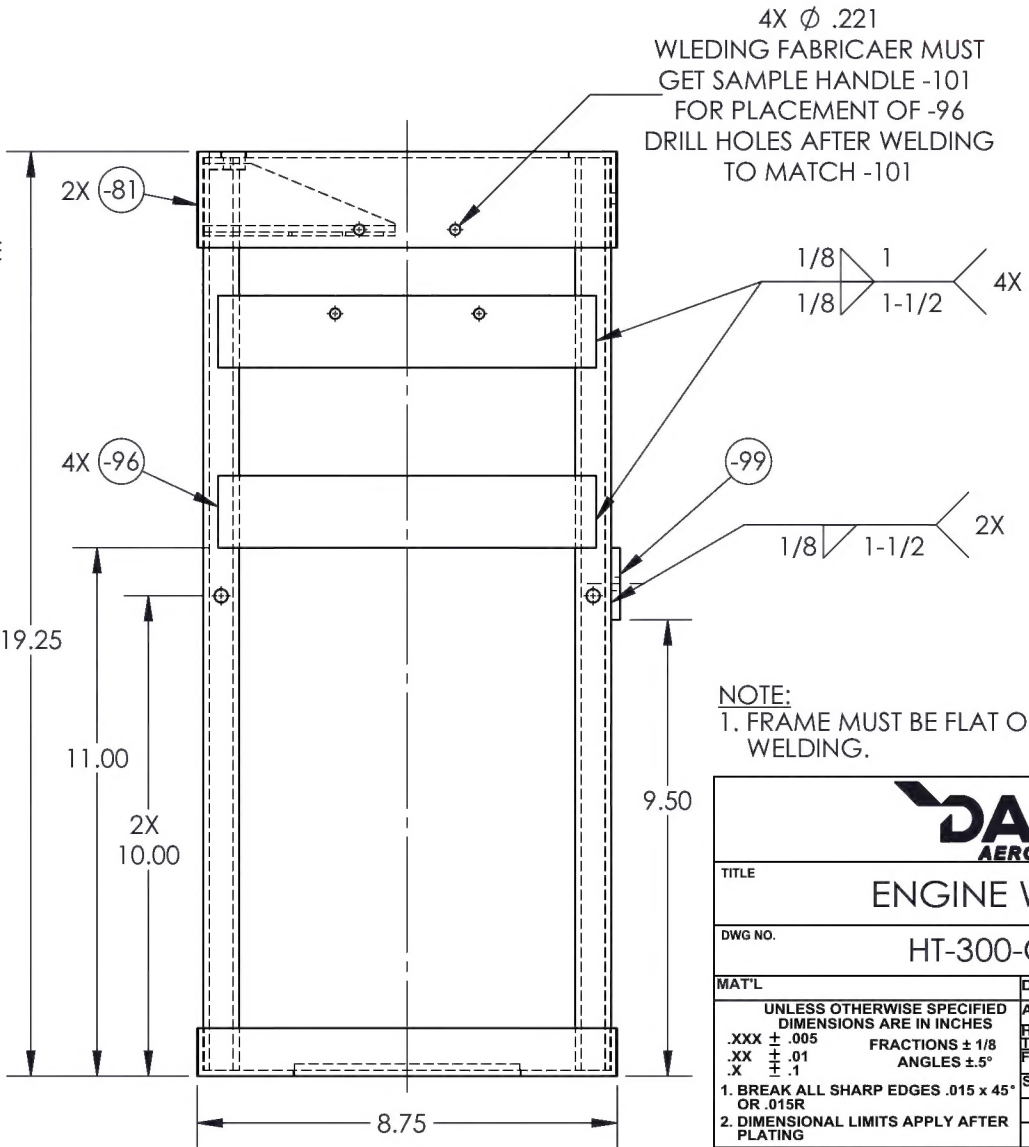
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REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
4		CH'D HANDLE HOLE POSITION -95 TO MATCH NEW HANDLES. OLD HANDLES ARE UNAVAILABLE.	4/26/10	WP	RW
5	14-0161	-61 ADDED DRILL HOLES AFTER WELDING TO MATCH -101 AND DELETED DIMS FOR HOLE PLACEMENT.	10/27/2014	RJC	JAG

SEE ATTACHED DEVIATION



-61  
WELDED FRAME ASSY



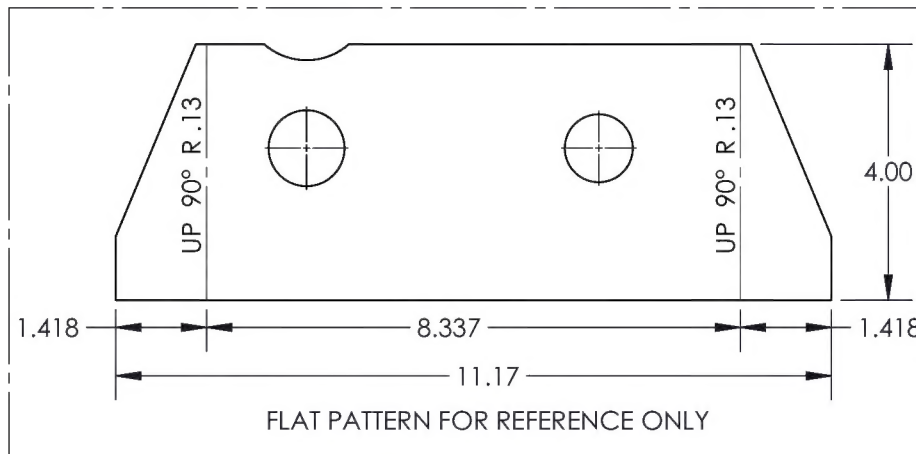
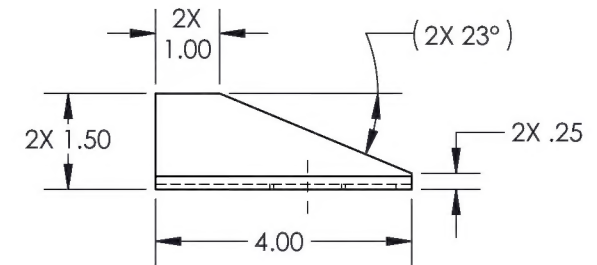
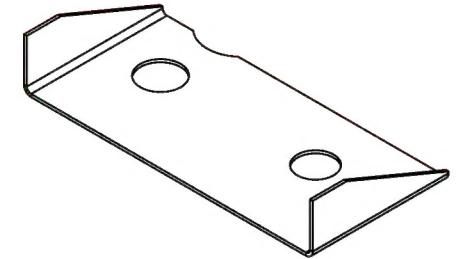
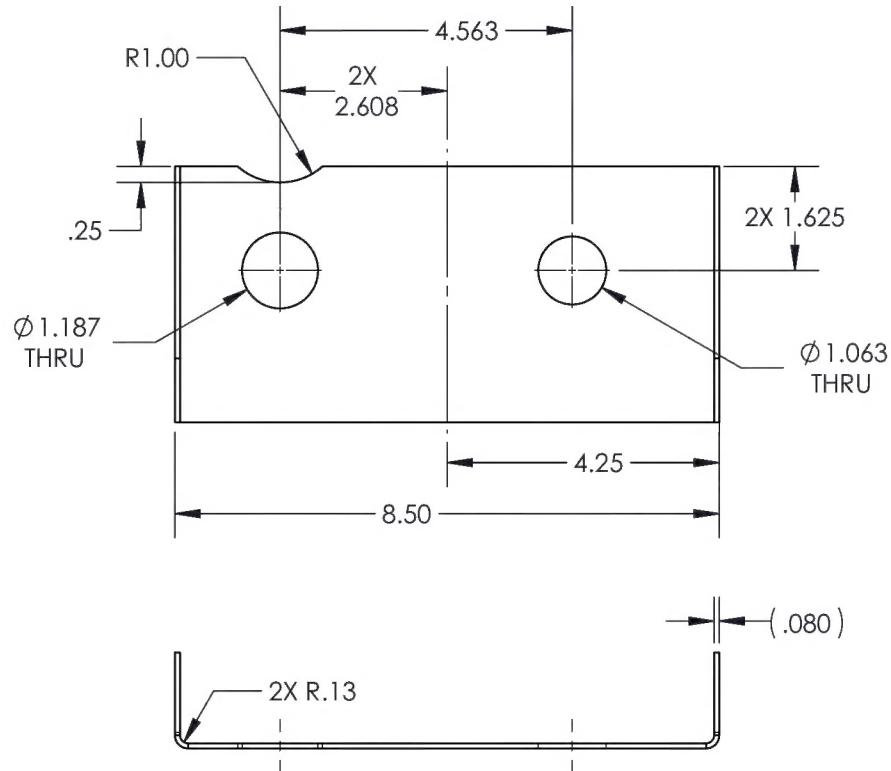
DART AEROSPACE		
TITLE ENGINE WASHER		
DWG NO. HT-300-C W-61	REV 6	
MAT'L UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES .XXX ± .005 FRACTIONS ± 1/8 .XX ± .01 ANGLES ± 5° .X ± .1	DRAWN BY: CLOUGH APPROVED: D Weil TREAT: POWDER COAT YELLOW FINISH: SPEC FED #13538 1. BREAK ALL SHARP EDGES .015 x 45° OR .015R 2. DIMENSIONAL LIMITS APPLY AFTER PLATING	
SCALE 1:4	DATE 9/26/2014	SHEET 6 OF 29



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REVISIONS			
REV	ECR	DESCRIPTION	DATE
			INITIAL
			APPROVED

**SEE ATTACHED DEVIATION**



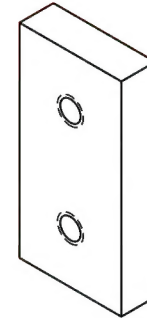
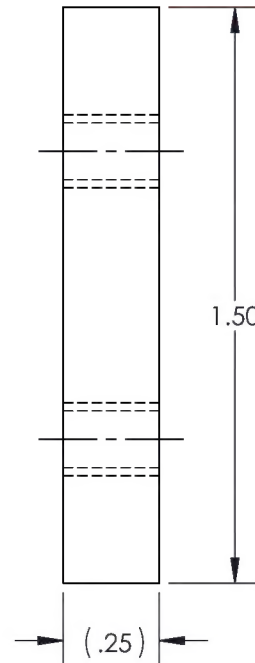
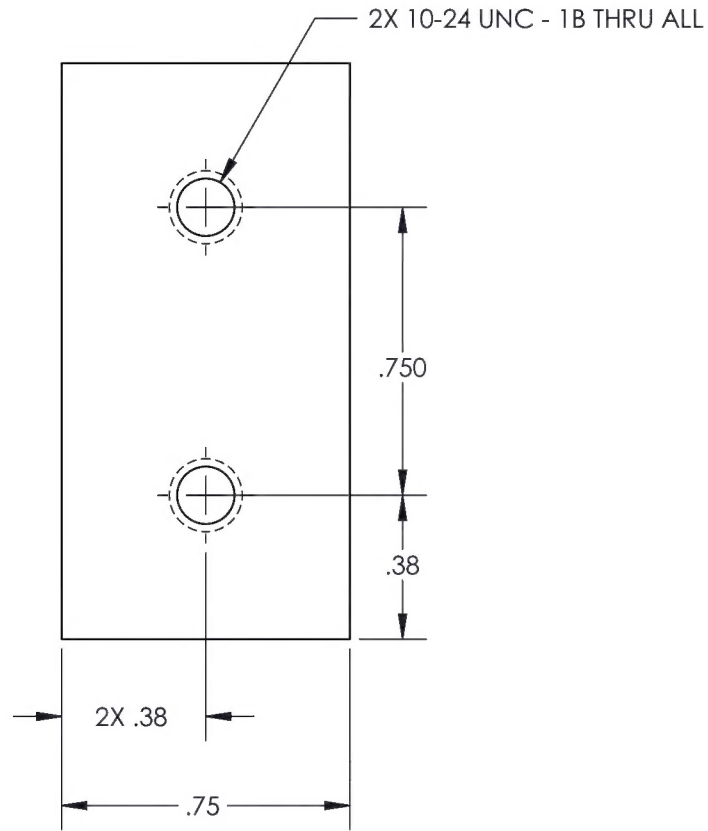
(-63)  
CONTROL PANEL

<b>DART</b> AEROSPACE	
TITLE ENGINE WASHER	
DWG NO. HT-300-CW-63	REV 6
MAT'L 5052	DRAWN BY: CLOUGH
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	APPROVED <i>D Weil</i>
.XXX ± .010 FRACTIONS ± 1/8	HEAT TREAT
.XX ± .03 ANGLES ± 5°	FINISH SEE -61 WELDMENT
.X ± .1	SPEC
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R	USED ON MODEL
2. DIMENSIONAL LIMITS APPLY AFTER PLATING	
SCALE 1:3	DATE 9/25/2014
SHEET 7 OF 29	

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REVISIONS							
REV	ECR	DESCRIPTION			DATE	INITIAL	APPROVED

**SEE ATTACHED DEVIATION**



(-65)

LID LATCH MOUNT

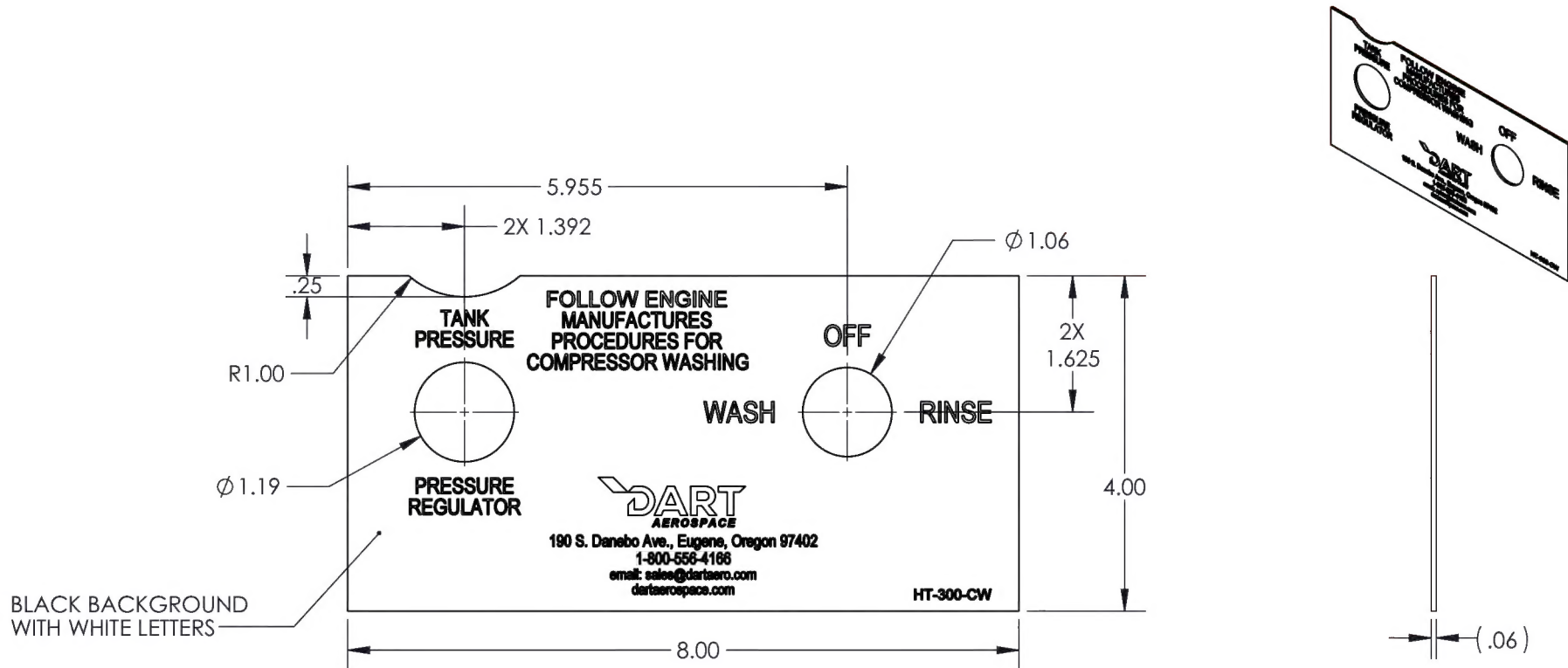
<b>DART AEROSPACE</b>	
TITLE <b>ENGINE WASHER</b>	
DWG NO. <b>HT-300-CW-65</b>	REV <b>6</b>
MAT'L 6061	DRAWN BY: CLOUGH
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	APPROVED <i>D Weil</i>
.XXX ± .005 FRACTIONS ± 1/8	HEAT TREAT
.XX ± .01 ANGLES ± 5°	FINISH SEE -61 WELDMENT
.X ± .1	SPEC
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R	USED ON MODEL
2. DIMENSIONAL LIMITS APPLY AFTER PLATING	
SCALE 2:1	DATE 9/25/2014 SHEET 8 OF 29



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REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
5A		CH'D PLACARD FROM HELI TECH TO DART AEROSPAC E.	9/5/13	RJC	RW
6	14-0161	-67 ADDED EMAIL TO EMAIL ADDRESS.	10/27/2014	RJC	JAG

**SEE ATTACHED DEVIATION**



NOTE:  
USE PDF FILE.

<b>DART AEROSPACE</b>	
TITLE <b>ENGINE WASHER</b>	
DWG NO. <b>HT-300-CW-67</b>	REV <b>6</b>
MAT'L PLASTIC	DRAWN BY: CLOUGH
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	APPROVED <i>D Weil</i>
.XXX ± .005	HEAT
.XX ± .01	TREAT
.X ± .1	FINISH
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R	SPEC
2. DIMENSIONAL LIMITS APPLY AFTER PLATING	USED ON MODEL
SCALE 1:2	DATE 9/26/2014
SHEET 9 OF 29	

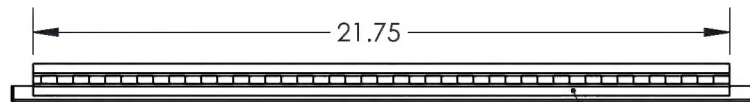
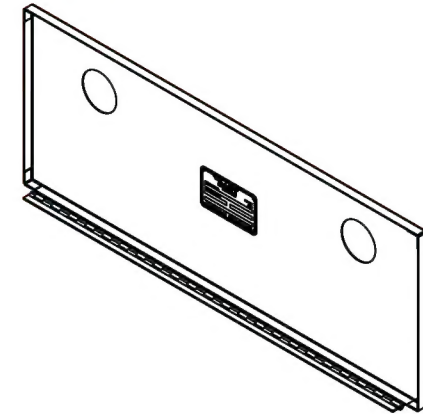
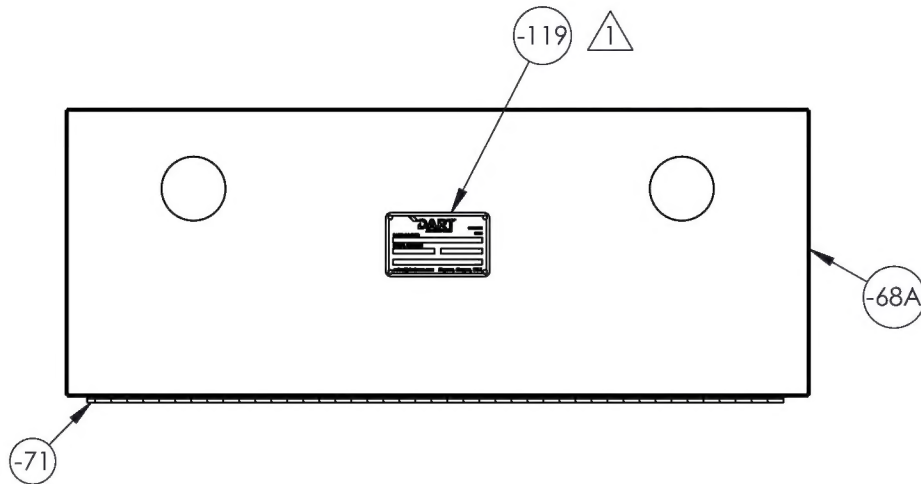
-67

CONTROL PANEL PLAQUE

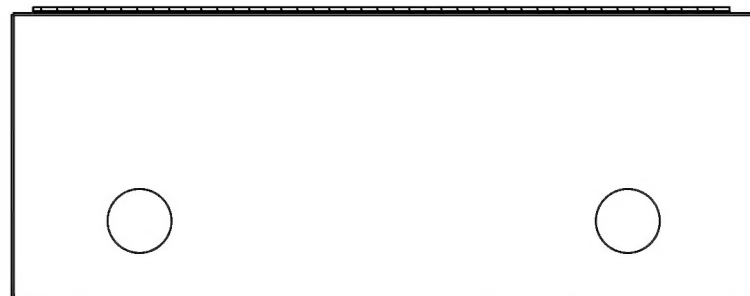
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REVISIONS				
REV	ECR	DESCRIPTION	DATE	INITIAL
				APPROVED

**SEE ATTACHED DEVIATION**



SPOT WELD -71 HINGE TO THIS SIDE 7X  
MATCHING OPPOSING SCREW HOLES  
WITH HINGE FACING OUT



-68

LID ASSEMBLY

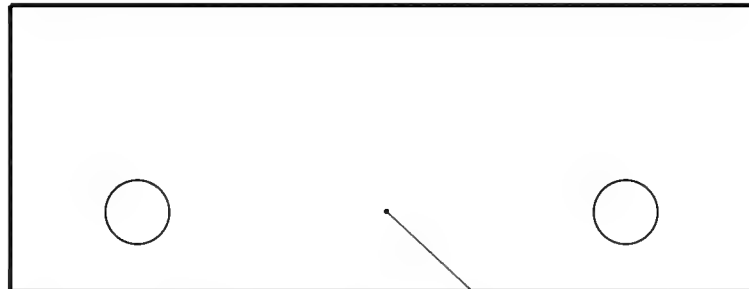
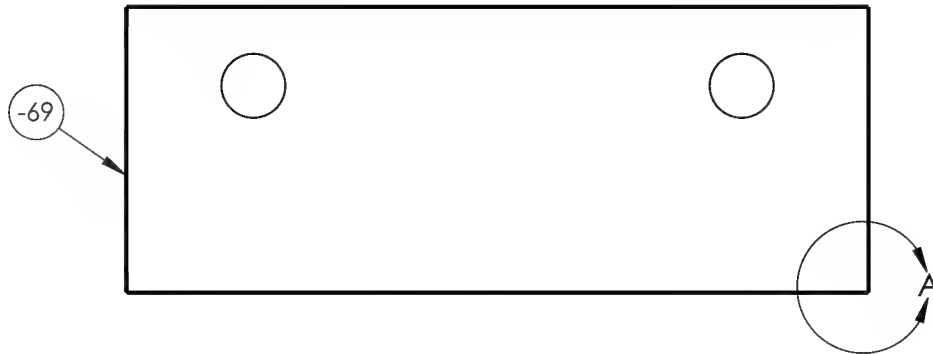
NOTE:

△ ENGRAVE -119 WITH T/N, S/N, SERIES 300  
ENGINE WASH SYSTEM.

<b>DART AEROSPACE</b>	
TITLE <b>ENGINE WASHER</b>	
DWG NO. <b>HT-300-CW-68</b>	REV <b>6</b>
MAT'L	DRAWN BY: <b>CLOUGH</b>
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	APPROVED <i>D Weil</i>
.XXX ± .005	HEAT
.XX ± .01	TREAT
.X ± .1	FINISH
FRACTIONS ± 1/8	SPEC
ANGLES ± 5°	USED ON MODEL
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R	
2. DIMENSIONAL LIMITS APPLY AFTER PLATING	
SCALE 1:6	DATE 9/26/2014
SHEET 10 OF 29	

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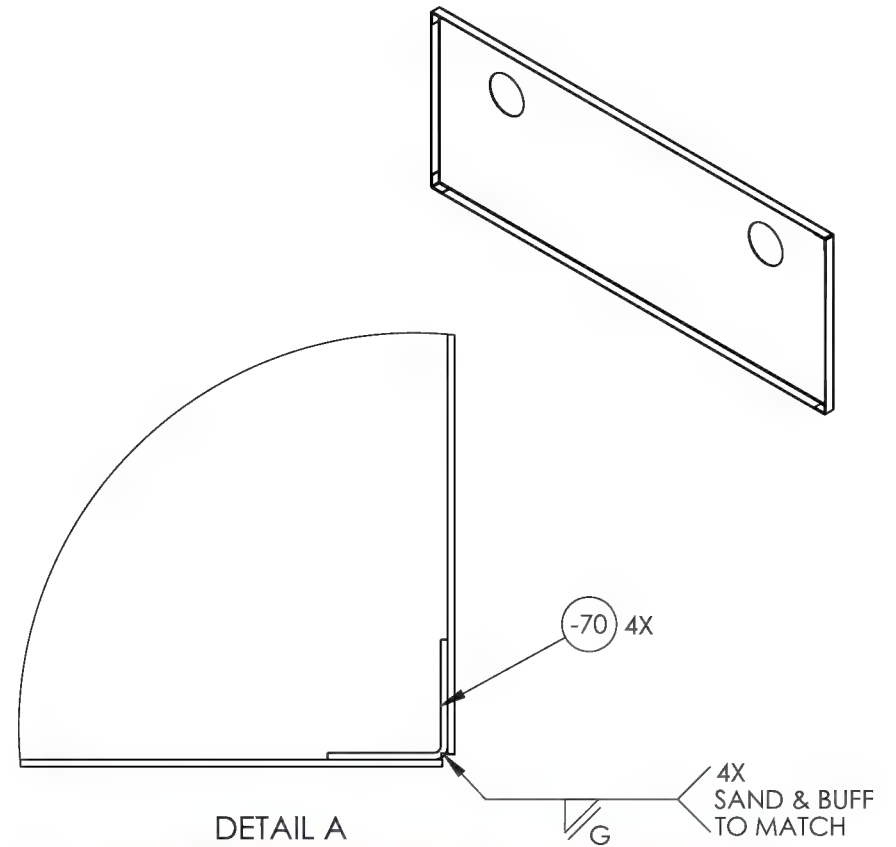
REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
1	14-0161	-68A ADDED LID WELDMENT DWG.	10/27/2014	RJC	JAG



VINYL COAT TOP SURFACE FOR PROTECTION  
IF POSSIBLE NO DIE MARKS, DENTS, OR SCRATCHES  
PERMITTED ON TOP SURFACE

-68A

LID WELDMENT



DETAIL A  
SCALE 1 : 1

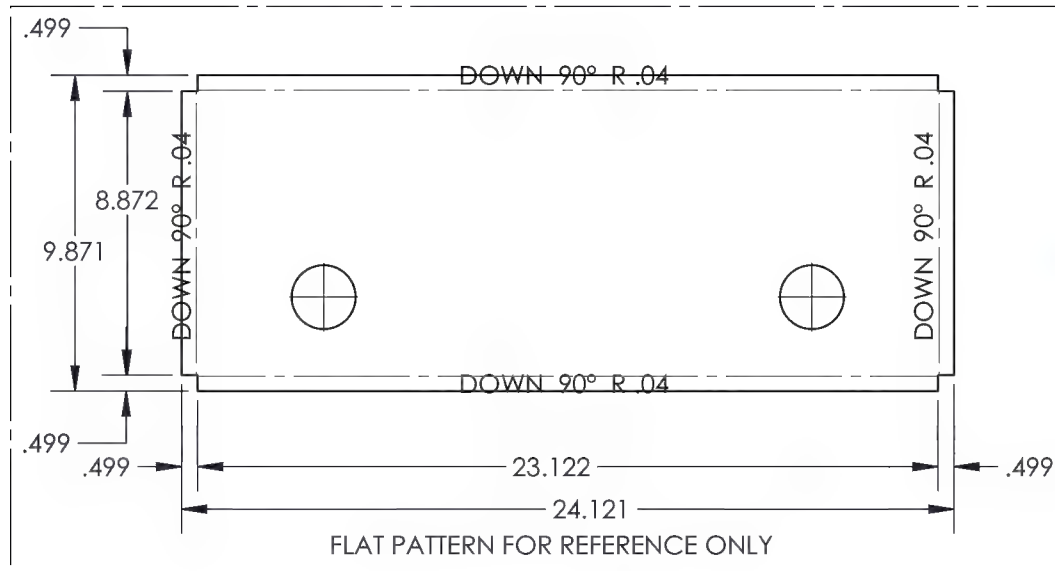
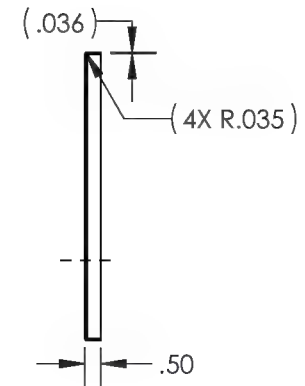
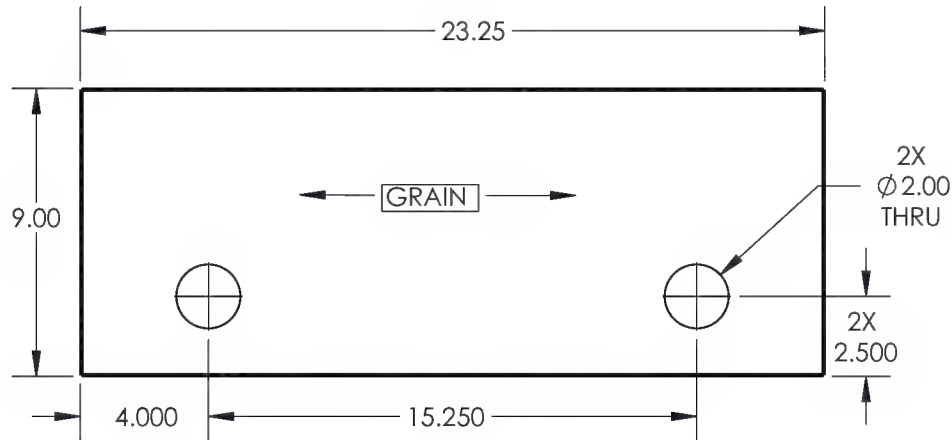
**SEE ATTACHED DEVIATION**

<b>DART AEROSPACE</b>	
TITLE ENGINE WASHER	
DWG NO. HT-300-CW-68A	REV 6
MAT'L UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES .XXX ± .005 FRACTIONS ± 1/8 .XX ± .01 ANGLES ± 5° .X ± .1	DRAWN BY: CLOUGH APPROVED <i>D Weil</i> HEAT TREAT FINISH SPEC
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R 2. DIMENSIONAL LIMITS APPLY AFTER PLATING	
SCALE 1:6	DATE 10/21/2014
SHEET 11 OF 29	



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REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
1		LID LENGTHENED BY 1/16 TO ALLOW FOR ADEQUATE CLEARANCE .	3/5/02		
6	14-0161	-69 CH'D DIM WAS .034 IS .036.	10/27/2014	RJC	JAG



(-69)  
LID

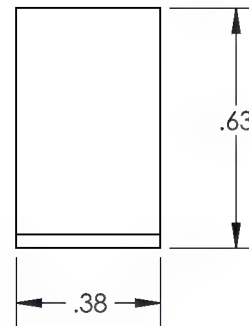
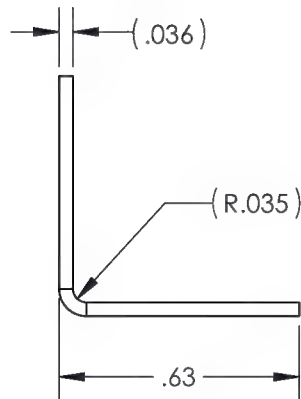
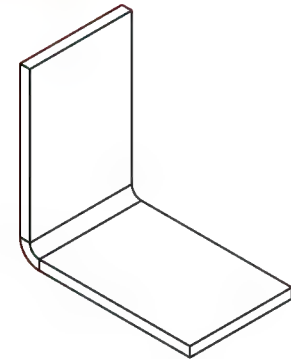
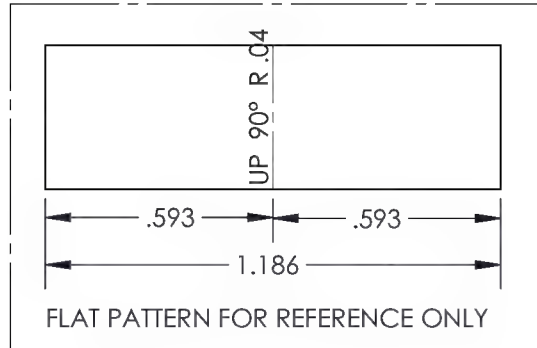
**SEE ATTACHED DEVIATION**

<b>DART</b> AEROSPACE	
TITLE ENGINE WASHER	
DWG NO. HT-300-CW-69	REV 6
MAT'L BRUSHED S.S. 304-4B	DRAWN BY: CLOUGH
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	APPROVED <i>D Weil</i>
.XXX ± .010	HEAT TREAT
.XX ± .03	FINISH
.X ± .1	SPEC
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R	USED ON MODEL
2. DIMENSIONAL LIMITS APPLY AFTER PLATING	
SCALE 1:6	DATE 9/26/2014
SHEET 12 OF 29	

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REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
6	14-0161	-70 CH'D DIM WAS .034 IS .036.	10/27/2014	RJC	JAG

**SEE ATTACHED DEVIATION**



(-70)

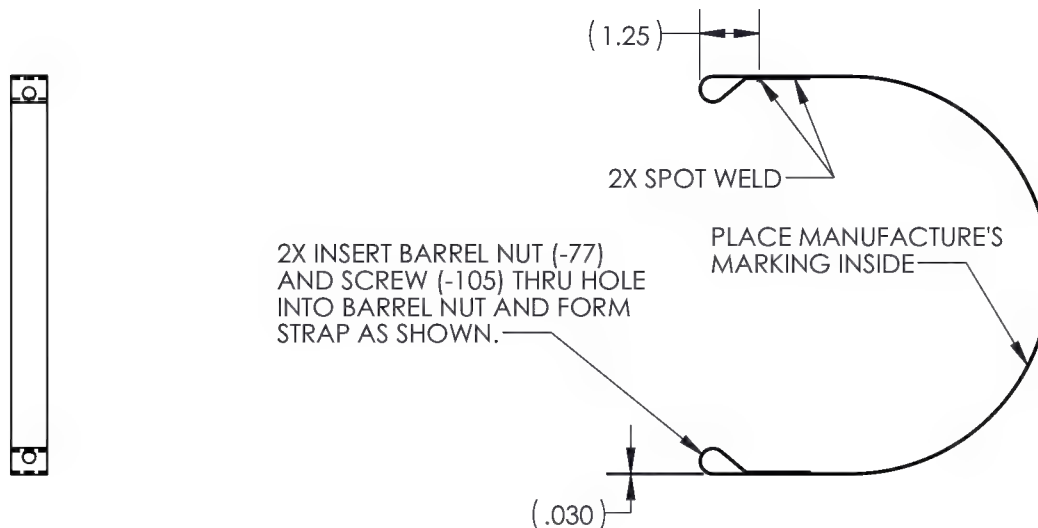
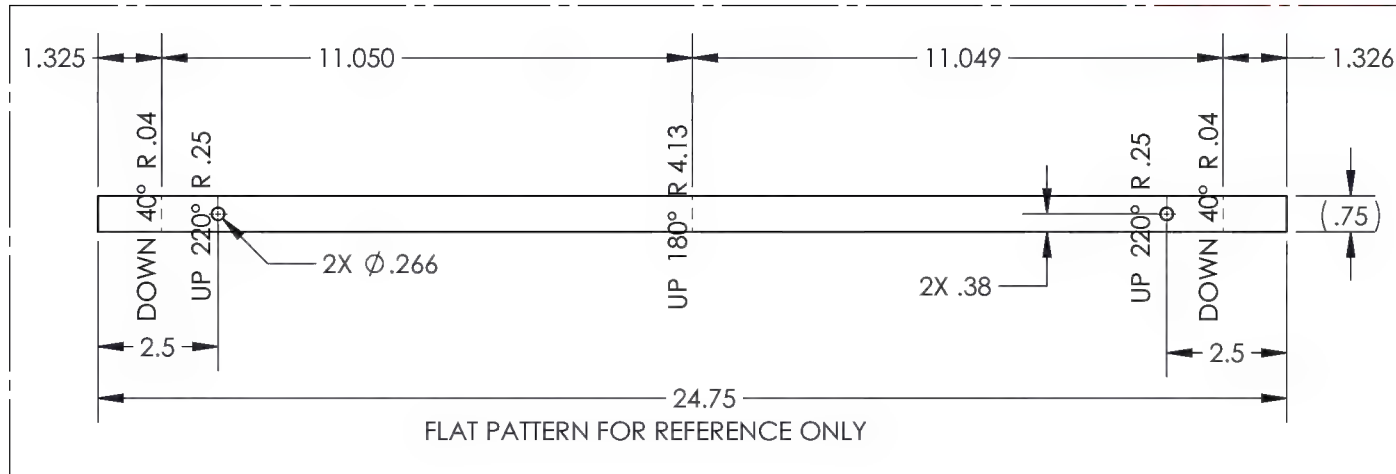
CORNER CLIP

<b>DART</b> AEROSPACE	
TITLE <b>ENGINE WASHER</b>	
DWG NO. <b>HT-300-CW-70</b>	REV <b>6</b>
MAT'L BRUSHED S.S. 304-4B	DRAWN BY: CLOUGH
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	APPROVED <i>D Weil</i>
.XXX ± .010	HEAT TREAT
.XX ± .03	FINISH
.X ± .1	SPEC
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R	USED ON MODEL
2. DIMENSIONAL LIMITS APPLY AFTER PLATING	
SCALE 2:1	DATE 9/26/2014
SHEET 13 OF 29	

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REVISIONS			
REV	ECR	DESCRIPTION	DATE
			INITIAL
			APPROVED

**SEE ATTACHED DEVIATION**



(-73)  
TANK STRAP

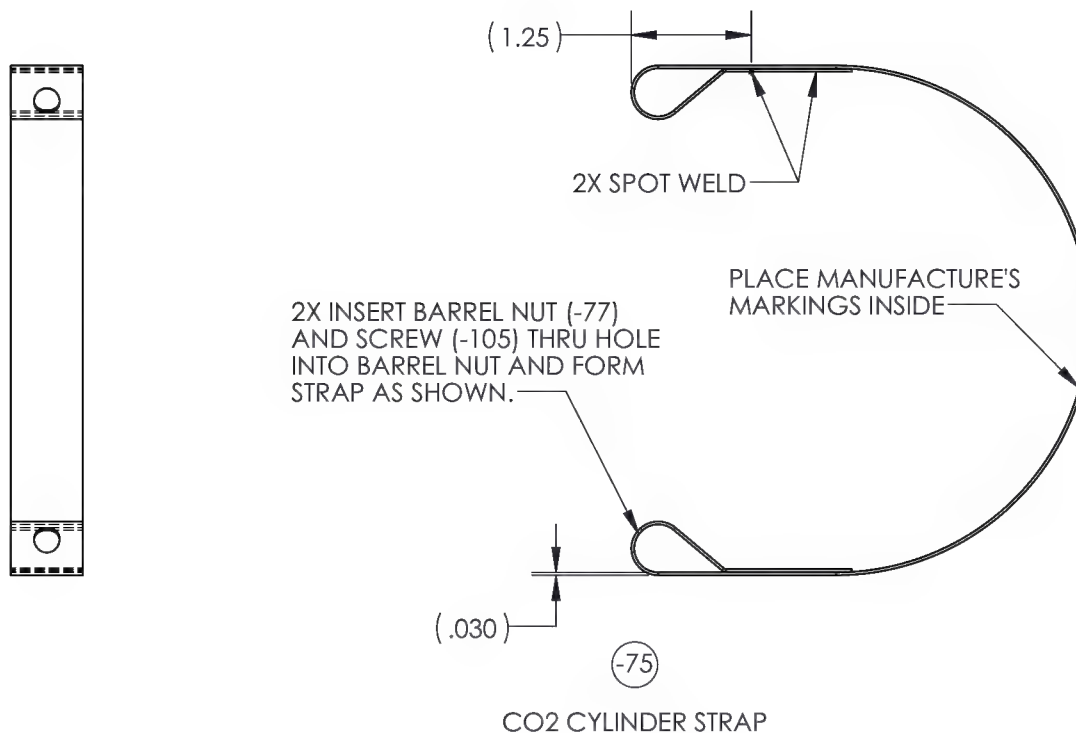
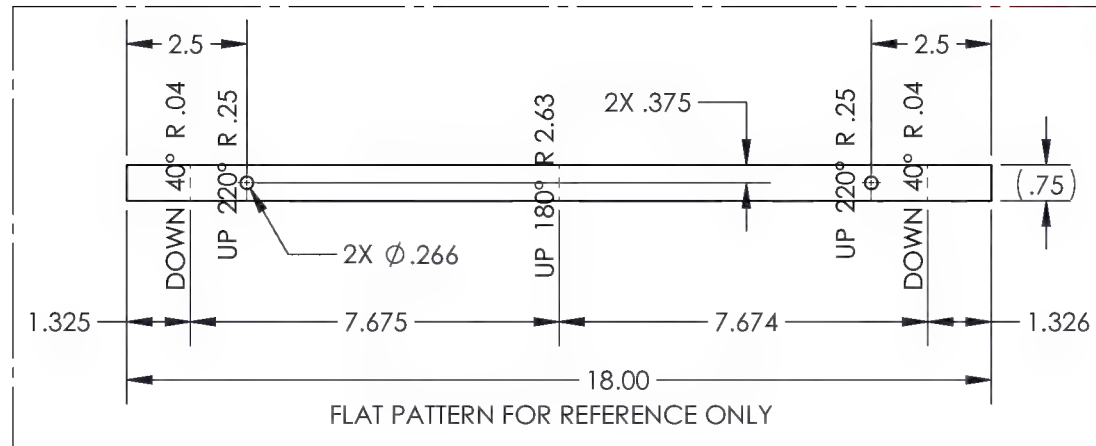
<b>DART</b> AEROSPACE	
TITLE ENGINE WASHER	
DWG NO. HT-300-CW-73	REV 6
MAT'L S.S.	DRAWN BY: CLOUGH
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	APPROVED <i>D Weil</i>
.XXX ± .010	HEAT
.XX ± .03	TREAT
.X ± .1	FINISH
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R	SPEC
2. DIMENSIONAL LIMITS APPLY AFTER PLATING	USED ON MODEL
SCALE 1:4	DATE 10/23/2014
SHEET 14 OF 29	



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REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
6	14-0161	-75 CH'D DESCRIPTION WAS CYLINDER STRAPPING IS CO2 CYLINDER STRAP.	10/27/2014	RJC	JAG

**SEE ATTACHED DEVIATION**

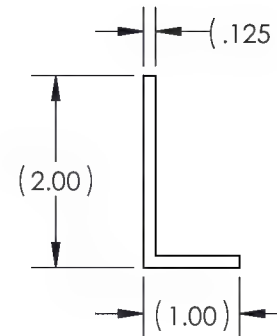
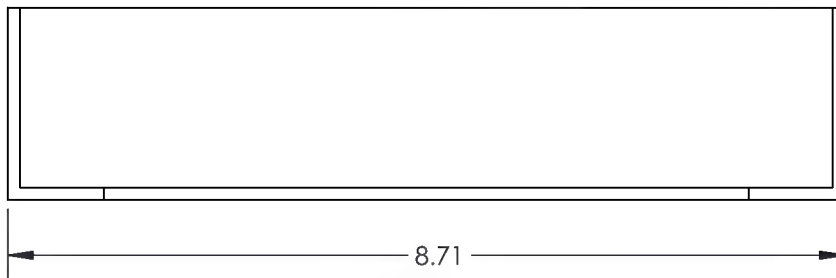
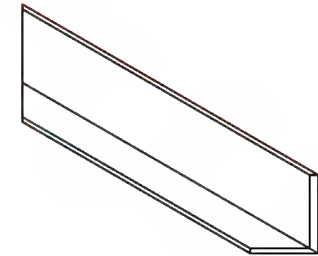
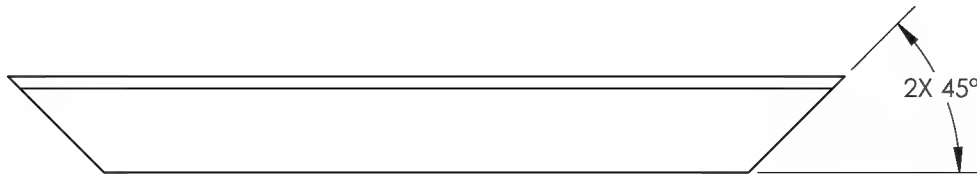


<b>DART</b> AEROSPACE	
TITLE ENGINE WASHER	
DWG NO. HT-300-CW-75	REV 6
MAT'L S.S.	DRAWN BY: CLOUGH
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	APPROVED <i>D Weil</i>
.XXX ± .010	HEAT
.XX ± .03	TREAT
.X ± .1	FINISH
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R	SPEC
2. DIMENSIONAL LIMITS APPLY AFTER PLATING	USED ON MODEL
SCALE 1:2	DATE 10/23/2014
SHEET 15 OF 29	

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REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
5		-81 CH'D HANDLE NOTE FROM 1.870 TO 1.75 MUST MATCH HANDLES -101. CH'D HOLE LOCATIONS FROM .43 TO .375.	2/7/13	RJC	GE
6	14-0161	-81 REMOVED Ø.234 HOLES AND MOVED TO -61 CH'D HOLE DIA. TO .221. MATERIAL CH'D WAS 6061 IS 6063 ARCHITECTURAL.	10/27/2014	RJC	JAG

**SEE ATTACHED DEVIATION**



(-81)

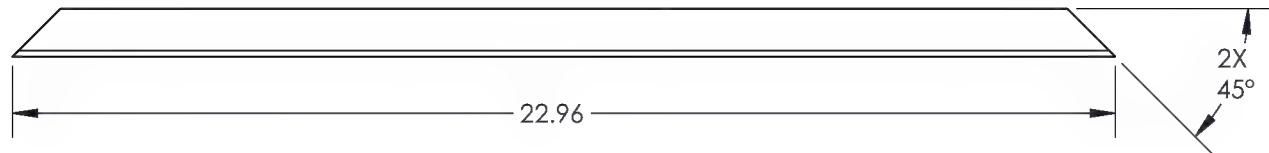
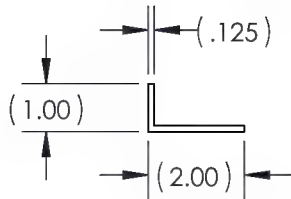
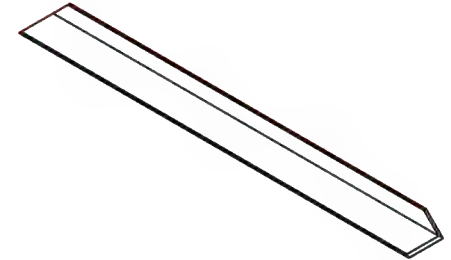
TOP SIDE RAILS

<b>DART AEROSPACE</b>	
TITLE <b>ENGINE WASHER</b>	
DWG NO. <b>HT-300-CW-81</b>	REV <b>6</b>
MAT'L 6063 ARCH.	DRAWN BY: CLOUGH
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	APPROVED <i>D Weil</i>
.XXX ± .005 FRACTIONS ± 1/8	HEAT TREAT
.XX ± .01 ANGLES ± 5°	FINISH SEE -61 WELDMENT
.X ± .1	SPEC
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R	USED ON MODEL
2. DIMENSIONAL LIMITS APPLY AFTER PLATING	
SCALE 1:2	DATE 9/26/2014 SHEET 16 OF 29

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REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
6	14-0161	-83 MATERIAL CH'D WAS 6061 IS 6063 ARCHITECTURAL.	10/27/14	RJC	JAG

**SEE ATTACHED DEVIATION**



(-83)  
BACK TOP RAIL

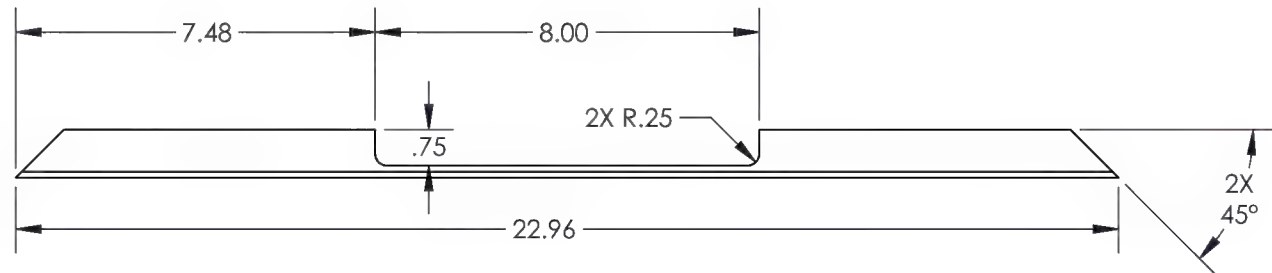
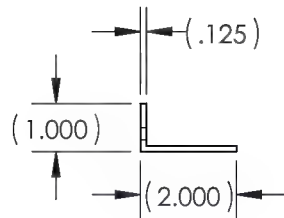
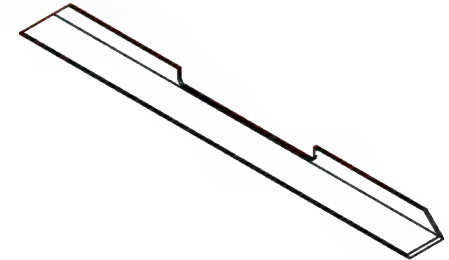
<b>DART AEROSPACE</b>	
TITLE <b>ENGINE WASHER</b>	
DWG NO. <b>HT-300-CW-83</b>	REV <b>6</b>
MAT'L 6063 ARCH.	DRAWN BY: CLOUGH
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	APPROVED <i>D Weil</i>
.XXX ± .005 FRACTIONS ± 1/8	HEAT TREAT
.XX ± .01 ANGLES ± 5°	FINISH SEE -61 WELDMENT
.X ± .1	SPEC
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R	USED ON MODEL
2. DIMENSIONAL LIMITS APPLY AFTER PLATING	
SCALE 1:4	DATE 9/25/2014
SHEET 17 OF 29	



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REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
6	14-0161	-85 MATERIAL CH'D WAS 6061 IS 6063 ARCHITECTURAL.	10/27/14	RJC	JAG

**SEE ATTACHED DEVIATION**



(-85)

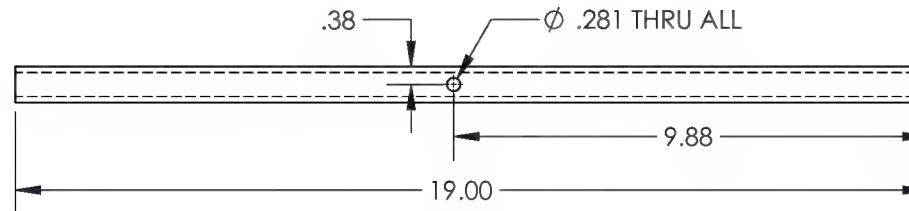
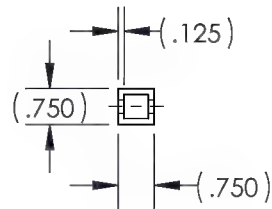
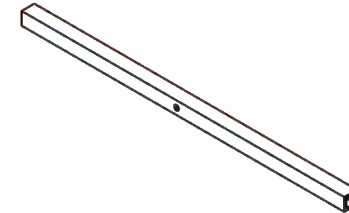
FRONT TOP RAIL

<b>DART AEROSPACE</b>		
TITLE <b>ENGINE WASHER</b>		
DWG NO. <b>HT-300-CW-85</b>		REV <b>6</b>
MAT'L 6063 ARCH.		DRAWN BY: CLOUGH
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		APPROVED <i>D Weil</i>
.XXX ± .005 FRACTIONS ± 1/8		HEAT TREAT
.XX ± .01 ANGLES ± 5°		FINISH SEE -61 WELDMENT
.X ± .1		SPEC
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R		USED ON MODEL
2. DIMENSIONAL LIMITS APPLY AFTER PLATING		
SCALE 1:4	DATE 9/25/2014	SHEET 18 OF 29

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REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
6	14-0161	-87 CH'D HOLE WAS Ø.312 IS .281. MATERIAL CH'D WAS 6061 IS 6063 ARCHITECTURAL.	10/27/2014	RJC	JAG

**SEE ATTACHED DEVIATION**



(-87)

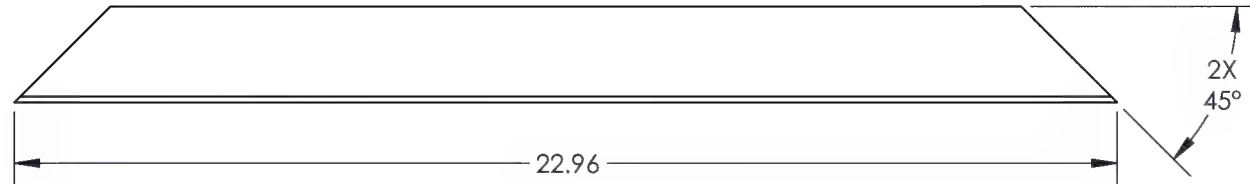
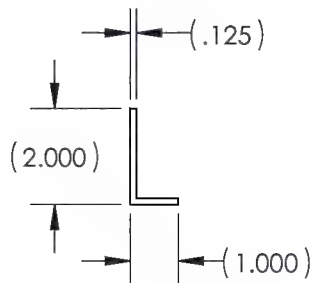
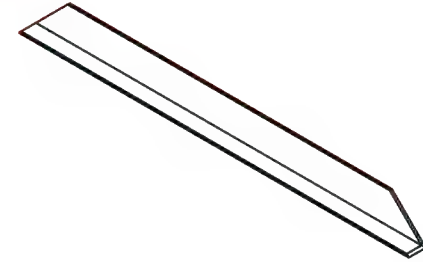
VERTICLE SUPPORTS

<b>DART AEROSPACE</b>		
TITLE <b>ENGINE WASHER</b>		
DWG NO. <b>HT-300-CW-87</b>		REV <b>6</b>
MAT'L 6061 SQ. CORNER		DRAWN BY: CLOUGH
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		APPROVED <i>D Weil</i>
.XXX ± .005 FRACTIONS ± 1/8		HEAT TREAT
.XX ± .01 ANGLES ± 5°		FINISH SEE -61 WELDMENT
.X ± .1		SPEC
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R		USED ON MODEL
2. DIMENSIONAL LIMITS APPLY AFTER PLATING		
SCALE 1:4	DATE 9/26/2014	SHEET 19 OF 29

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REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
6	14-0161	-89 MATERIAL CH'D WAS 6061 IS 6063 ARCHITECTURAL.	10/27/14	RJC	JAG

**SEE ATTACHED DEVIATION**



(-89)

BOTTOM FRONT AND BACK RAILS

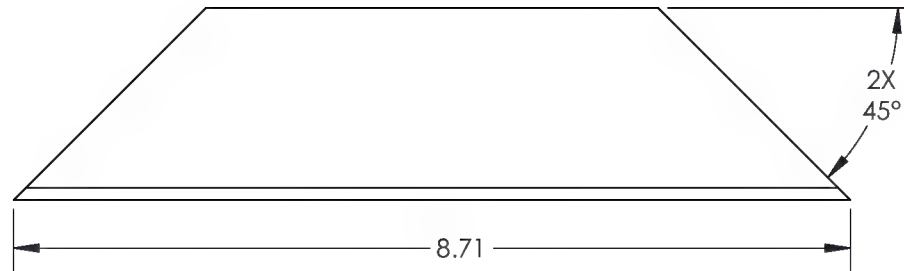
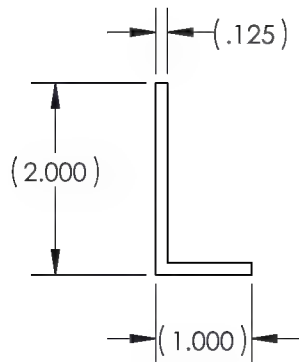
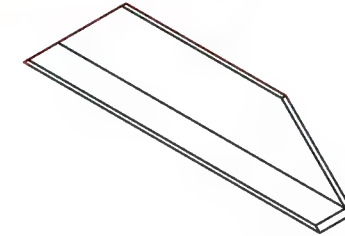
<b>DART AEROSPACE</b>		
TITLE <b>ENGINE WASHER</b>		
DWG NO. <b>HT-300-CW-89</b>		REV <b>6</b>
MAT'L 6063 ARCH.		DRAWN BY: CLOUGH
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		APPROVED <i>D Weil</i>
.XXX ± .005 FRACTIONS ± 1/8		HEAT TREAT
.XX ± .01 ANGLES ± 5°		FINISH SEE -61 WELDMENT
.X ± .1		SPEC
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R		USED ON MODEL
2. DIMENSIONAL LIMITS APPLY AFTER PLATING		
SCALE 1:4	DATE 9/26/2014	SHEET 20 OF 29



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REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
6	14-0161	-91 MATERIAL CH'D WAS 6061 IS 6063 ARCHITECTURAL.	10/27/14	RJC	JAG

**SEE ATTACHED DEVIATION**



(-91)

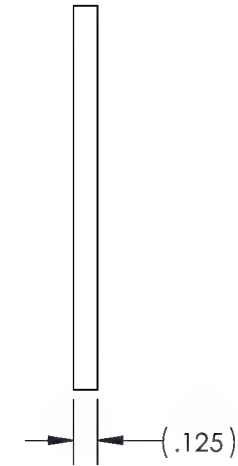
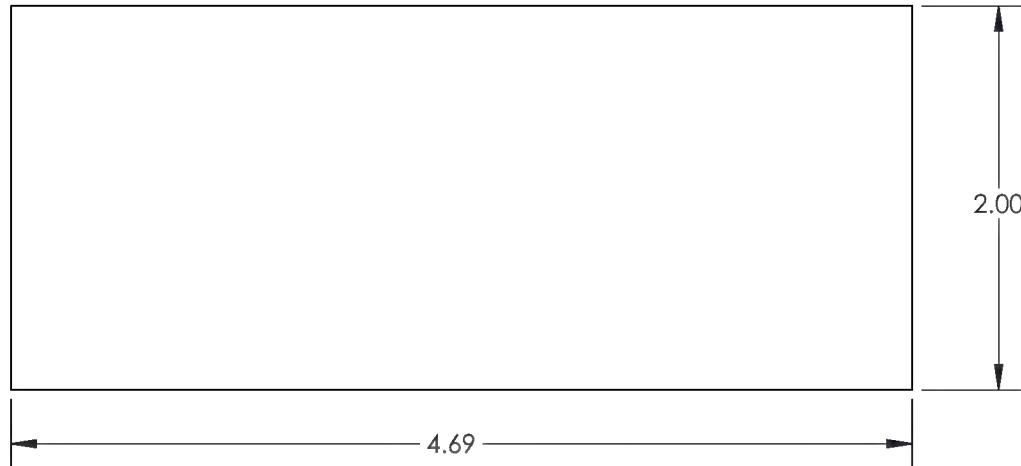
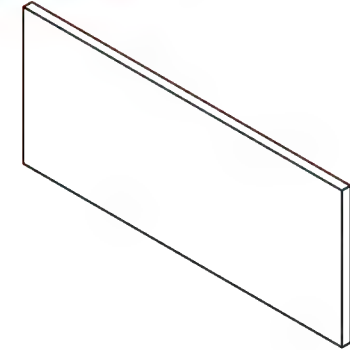
BOTTOM SIDE RAILS

<b>DART AEROSPACE</b>	
TITLE <b>ENGINE WASHER</b>	
DWG NO. <b>HT-300-CW-91</b>	REV <b>6</b>
MAT'L 6063 ARCH.	DRAWN BY: CLOUGH
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	APPROVED <i>D Weil</i>
.XXX ± .005	HEAT TREAT
.XX ± .01	FINISH SEE -61 WELDMENT
.X ± .1	ANGLES ± 5°
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R	SPEC
2. DIMENSIONAL LIMITS APPLY AFTER PLATING	USED ON MODEL
SCALE 1:2	DATE 9/26/2014
SHEET 21 OF 29	

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REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED

**SEE ATTACHED DEVIATION**



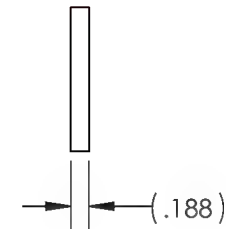
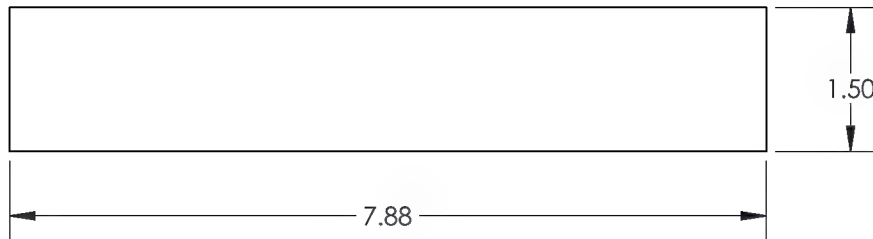
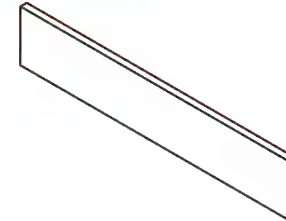
(-93)  
BOTTOM PLATES

TITLE ENGINE WASHER	
DWG NO. HT-300-CW-93	REV 6
MAT'L 6061	DRAWN BY: CLOUGH
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	APPROVED <i>D Weil</i>
.XXX ± .005 FRACTIONS ± 1/8	HEAT TREAT
.XX ± .01 ANGLES ± 5°	FINISH SEE -61 WELDMENT
.X ± .1	SPEC
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R	USED ON MODEL
2. DIMENSIONAL LIMITS APPLY AFTER PLATING	
SCALE 1:1	DATE 9/26/2014
SHEET 22 OF 29	

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REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
5		-96 ADDED SIDE BAR W/O HOLES.	1/31/13	RJC	SE
6	14-0161	-96 CORRECTED BOM QUANTITY WAS 2 IS 4, PER REV 5.	10/27/14	RJC	JAG

**SEE ATTACHED DEVIATION**



(-96)

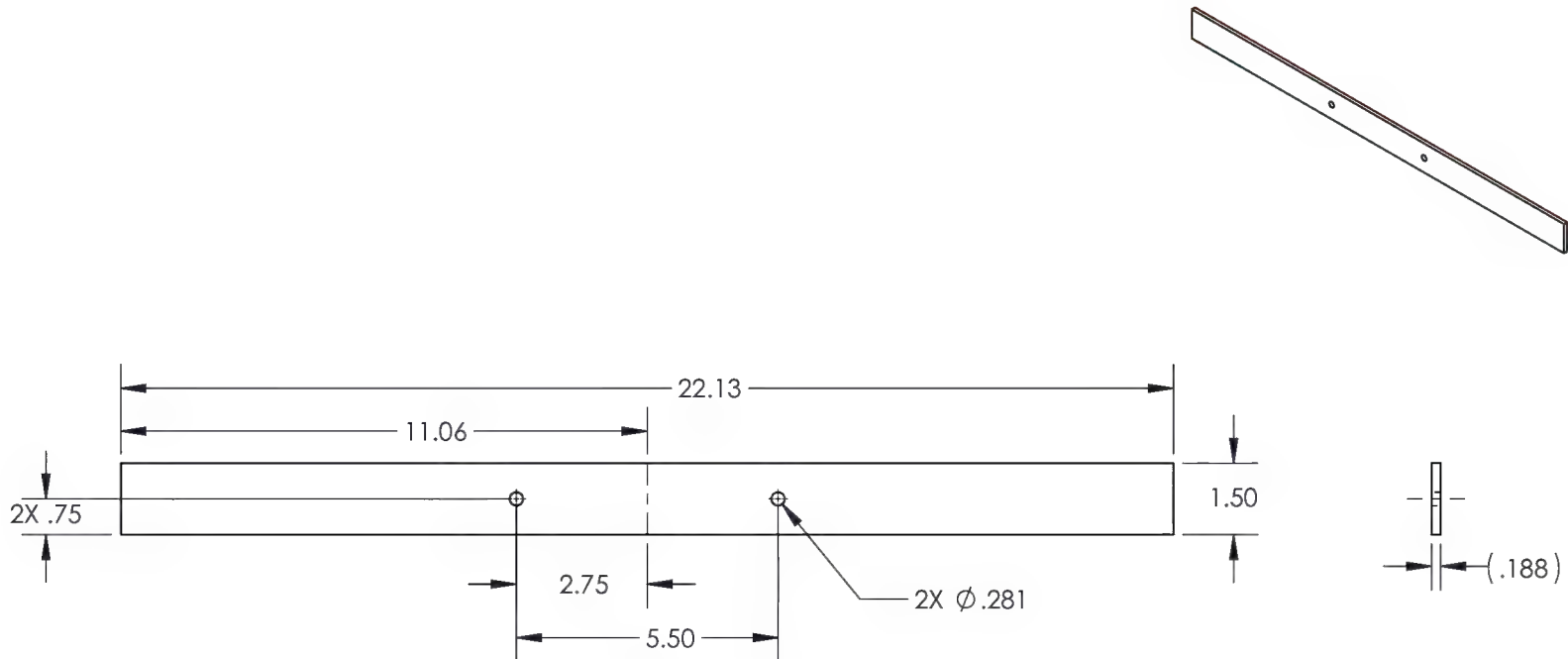
SIDE BARS

<b>DART AEROSPACE</b>		
TITLE <b>ENGINE WASHERS</b>		
DWG NO. <b>HT-300-CW-96</b>		REV <b>6</b>
MAT'L 6061		DRAWN BY: CLOUGH
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		APPROVED <i>D Weil</i>
.XXX ± .005 FRACTIONS ± 1/8		HEAT TREAT
.XX ± .01 ANGLES ± 5°		FINISH SEE -61 WELDMENT
.X ± .1		SPEC
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R		USED ON MODEL
2. DIMENSIONAL LIMITS APPLY AFTER PLATING		
SCALE 1:2	DATE 9/26/2014	SHEET 23 OF 29

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REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
6	14-0161	-99 CH'D HOLE WAS 2X Ø.312 IS 2X Ø.281.	10/27/2014	RJC	JAG

**SEE ATTACHED DEVIATION**



(-99)

BACK BAR

<b>DART</b> AEROSPACE	
TITLE <b>ENGINE WASHER</b>	
DWG NO. <b>HT-300-CW-99</b>	REV <b>6</b>
MAT'L 6061	DRAWN BY: CLOUGH
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	APPROVED <i>D Weil</i>
.XXX ± .005	HEAT TREAT
.XX ± .01	FINISH SEE -61 WELDMENT
.X ± .1	ANGLES ± 5°
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R	SPEC
2. DIMENSIONAL LIMITS APPLY AFTER PLATING	USED ON MODEL
SCALE 1:4	DATE 9/26/2014
SHEET 24 OF 29	

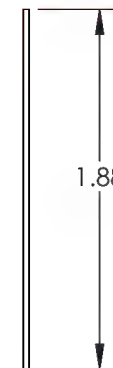
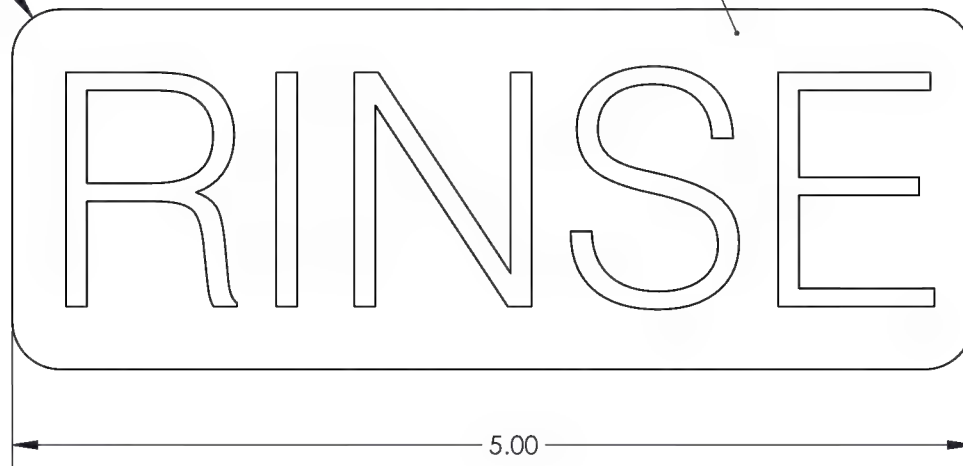
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REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
3		ADDED RINSE LABEL DWG.	12/27/07	WP	RW

**SEE ATTACHED DEVIATION**

WHITE LETTERS WITH  
BLACK BACKGROUND,  
FONT IS SWIS 721  
CHARACTER HT. 1.22  
LINE THICKNESS 3/16

4X R.25



(-121)

RINSE LABEL

TITLE ENGINE WASHER	
DWG NO. HT-300-CW-121	REV 6
MAT'L PLASTIC	DRAWN BY: CLOUGH
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	APPROVED <i>D Weil</i>
.XXX ± .005	HEAT
.XX ± .01	TREAT
.X ± .1	FINISH
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R	SPEC
2. DIMENSIONAL LIMITS APPLY AFTER PLATING	USED ON MODEL
SCALE 1:1	DATE 9/29/2014
SHEET 25 OF 29	



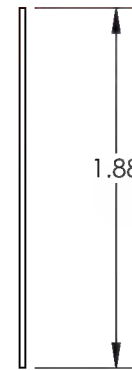
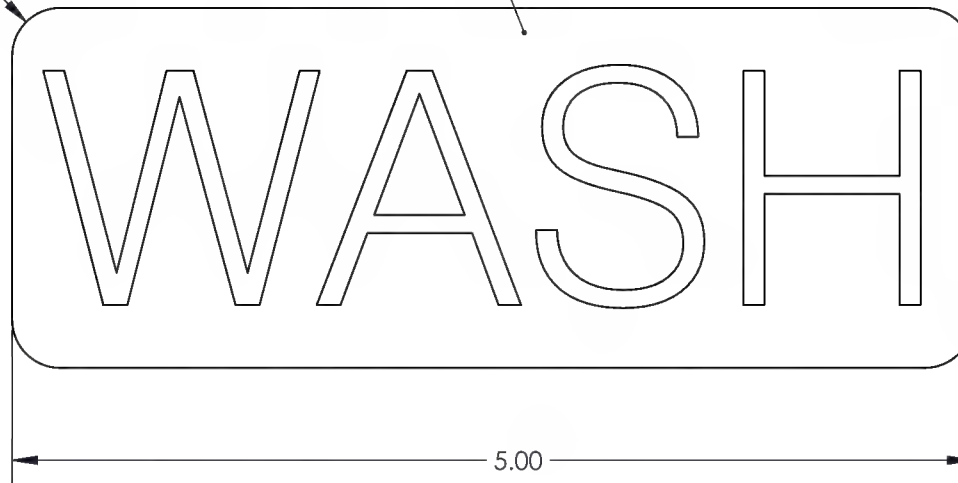
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REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
3		ADDED WASH LABEL DWG.	12/27/07	WP	RW

**SEE ATTACHED DEVIATION**

WHITE LETTERS WITH  
BLACK BACKGROUND,  
FONT IS SWIS 721  
CHARACTER HT. 1.22  
LINE THICKNESS 3/16

4X R.25



-123

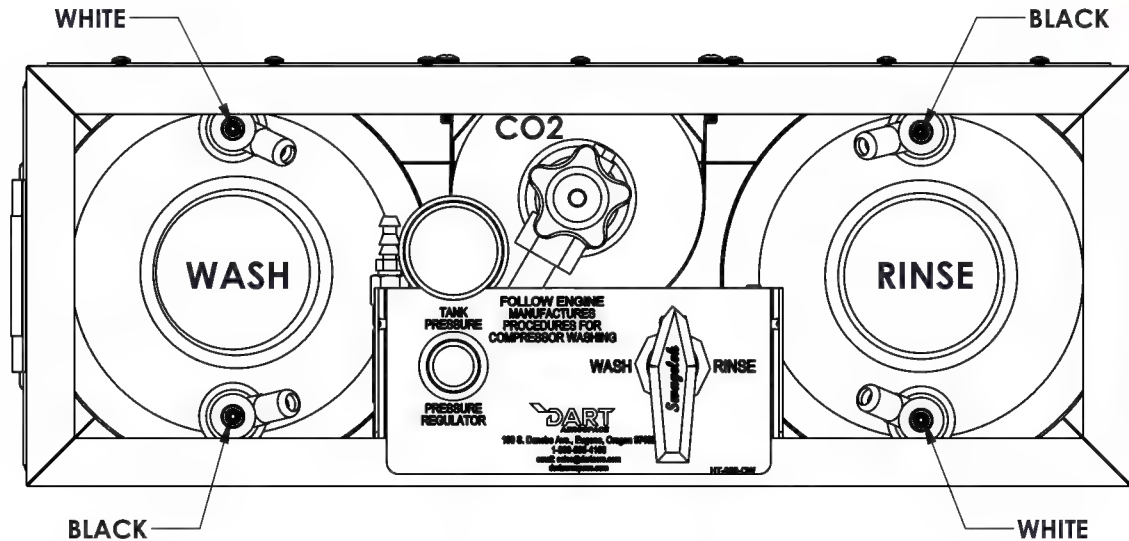
WASH LABEL

<b>DART AEROSPACE</b>	
TITLE <b>ENGINE WASHER</b>	
DWG NO. <b>HT-300-CW-123</b>	REV <b>6</b>
MAT'L PLASTIC	DRAWN BY: CLOUGH
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	APPROVED <i>D Weil</i>
.XXX ± .005	HEAT
.XX ± .01	TREAT
.X ± .1	FINISH
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R	SPEC
2. DIMENSIONAL LIMITS APPLY AFTER PLATING	USED ON MODEL
SCALE 1:1	DATE 9/29/2014
SHEET 26 OF 29	

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REVISIONS				
REV	ECR	DESCRIPTION	DATE	INITIAL
				APPROVED

**SEE ATTACHED DEVIATION**



### TESTING PROCEDURES:

1. PLACE OPERATING HANDLE IN THE OFF POSTION.
2. CHECK TANKS FOR PROPER TUBE INSTALLATION AND REMOVE ANY DEBRIS.
3. REGULATE SHOP AIR TO 75 PSI.
4. WITH TANKS OPEN BLOW AIR THROUGH LINES TO PURGE.
5. REPLACE TANK LIDS.
6. SET REGULATOR TO 75 PSI AND CHARGE SYSTEM.
7. DICONNECT SHOP AIR AND BLEED ALL PRESSURE FROM WASH TANK THEN VERIFY RINSE TANK IS STILL PRESSURIZED. THIS TEST CHECKS VALVE OPERATION.
8. REPEAT #5 & #6 ABOVE FOR OTHER TANK.
9. COMPLETELY BLEED SYSTEM AND PUT A QUART OF WATER IN EACH TANK.
10. CHARGE SYSTEM WITH SHOP AIR.
11. MOVE OPERATING HANDLE TO WASH POSITION, LOOSEN SHIPPING PLUG IN END OF OUTPUT HOSE TO BLEED OFF AIR IN LINE, TIGHTEN PLUG WHEN WATER COMES OUT.
12. CHECK FOR LEAKS AT ALL FITTINGS.
13. REPEAT #11 & #12 FOR RINSE POSITION.
14. MOVE OPERATING HANDLE TO OFF POSITION, REMOVE SHIPPING PLUG FROM OUTPUT HOSE.
15. BLOW WATER OUT OF EACH TANK.
16. AGAIN SELECT OFF POSTION, SET REGULATOR BELOW 30 PSI.
17. CLEAN UP WASH KIT AND DRY OUT TANKS.
18. APPLY DECALS AS REQUIRED.
19. LEAVE TANK VENTS OPEN FOR SHIPPING.
20. BOX FOR SHIPPING.

### NOTE:

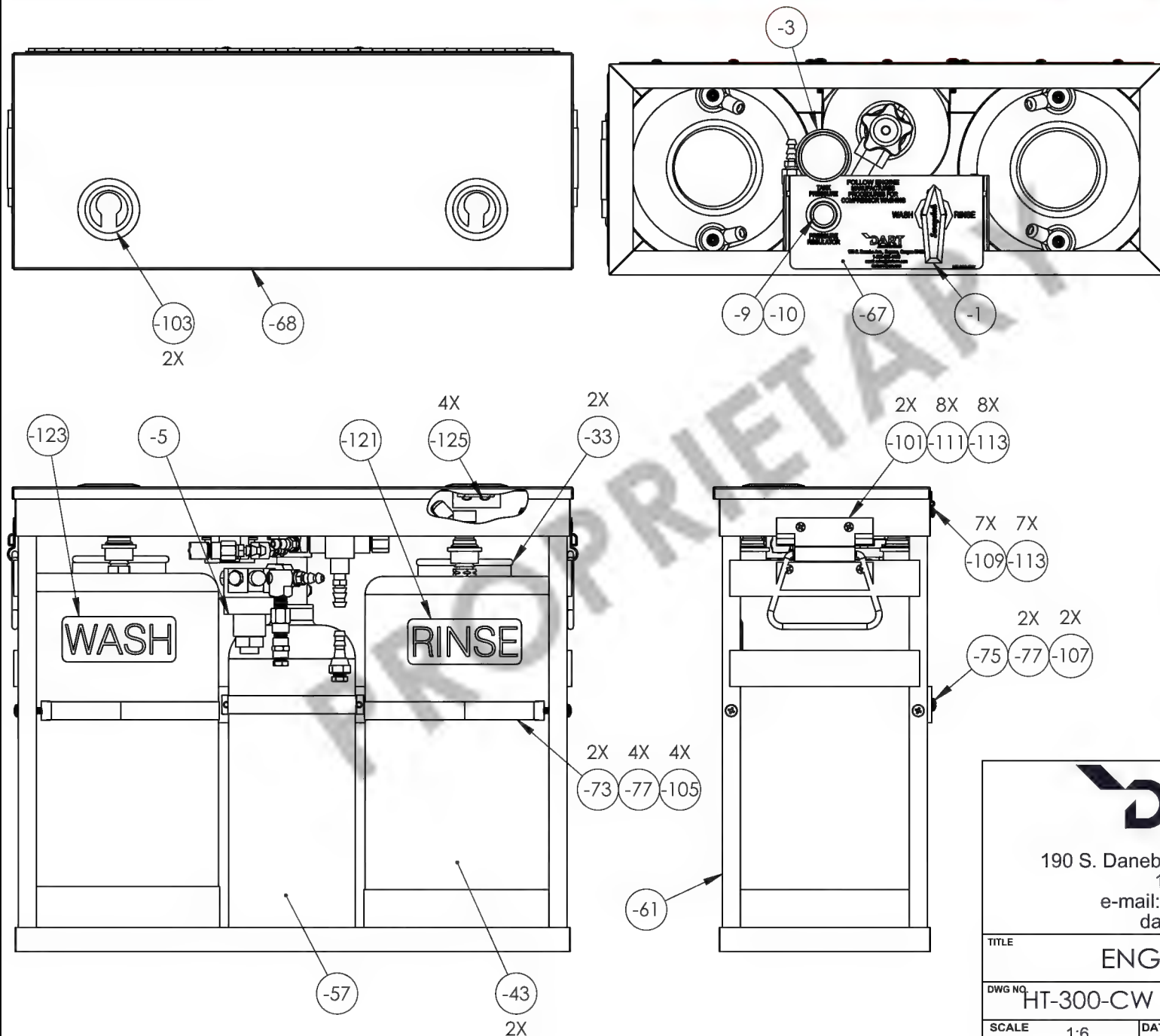
**DO NOT CHARGE CO2 TANK!**

CO2 TANK MAY NOT BE SHIPPED BY AIR IF IT HAS EVER BEEN CHARGED.


<b>DART</b> AEROSPACE	
TITLE <b>ENGINE WASHER</b>	
DWG NO. <b>HT-300-CW</b>	REV <b>6</b>
MAT'L	DRAWN BY: <b>CLOUGH</b>
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	APPROVED <i>D Weil</i>
.XXX ± .005 FRACTIONS ± 1/8	HEAT
.XX ± .01 ANGLES ± 5°	TREAT
.X ± .1	FINISH
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R	SPEC
2. DIMENSIONAL LIMITS APPLY AFTER PLATING	USED ON MODEL
SCALE 1:4	DATE 10/15/2014
SHEET 27 OF 29	

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**SEE ATTACHED DEVIATION**



HT-300-CW BILL OF MATERIALS	
-1	1 BALL VALVE
-3	1 PRESSURE GAUGE
-5	1 GAS CYLINDER REGULATOR
-7	3 CHECK VALVE
-9	1 REGULATOR
-10	1 RING
-11	2 90° ELBOW
-13	1 CLOSE NIPPLE
-15	1 LIGHT COUPLING
-17	1 RUN TEE
-19	1 BRANCH TEE
-21	2 45° ELBOW
-23	1 PLUG
-25	4 PLUG
-27	6 PUSH LOCK FITTINGS
-29	1 PUSH LOCK FITTING
-31	1 CO2 INLET NIPPLE
-33	2 TANK CAP O-RINGS
-43	2 TANK W/FITTINGS
-45	2 WHITE QUICK DISCONNECT
-47	2 BLACK QUICK DISCONNECT
-53	1 Ø1/4 I.D. X 3-1/2 ft HOSE
-55	1 Ø3/8 I.D. X 15 ft HOSE
-57	1 CO2 TANK #5 EMPTY
-61	1 WELDED FRAME ASSY
-67	1 CONTROL PANEL PLAQUE
-68	1 LID ASSY
-73	2 TANK STRAP
-75	1 CO2 CYLINDER STRAP
-77	6 BARREL NUTS
-101	2 CHEST HANDLES
-103	2 TOP PULL LATCH
-105	4 PAN HEAD SCREWS
-107	2 PAN HEAD SCREWS
-109	7 PAN HEAD SCREWS
-111	8 FLAT HEAD SCREWS
-113	15 NYLON LOCK NUTS
-115	1 HOSE FITTING
-119	1 DART PLACARD
-121	1 RINSE LABEL
-123	1 WASH LABEL
-125	4 PAN HEAD SCREWS

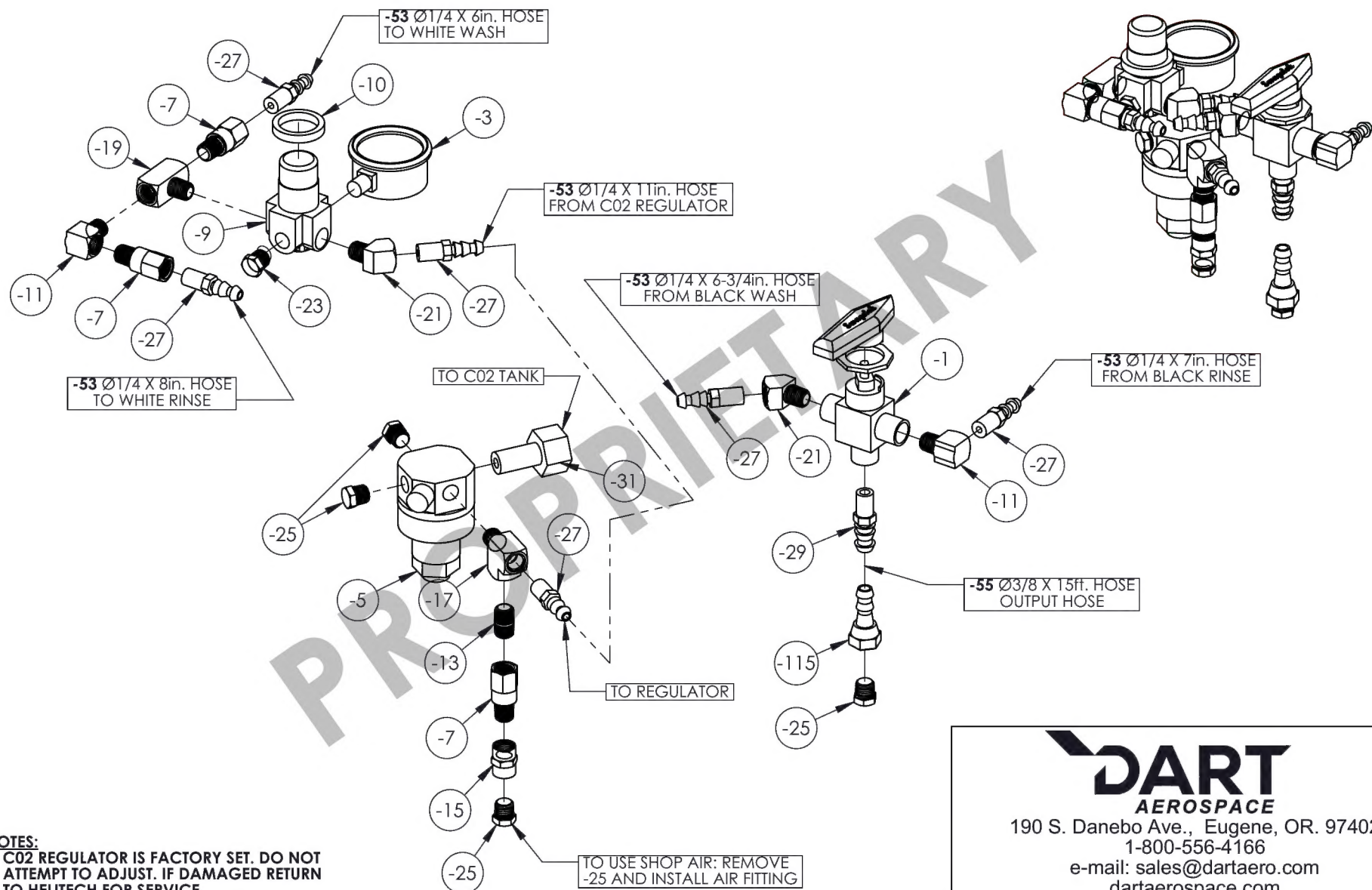


**DART AEROSPACE**  
 190 S. Danebo Ave., Eugene, OR. 97402  
 1-800-556-4166  
 e-mail: sales@dartaero.com  
 dartaerospace.com

TITLE <b>ENGINE WASHER</b>		
DWG NO. <b>HT-300-CW</b>	REV <b>6</b>	CUSTOMER 1 OF 2
SCALE 1:6	DATE 10/15/2014	SHEET 28 OF 29

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**SEE ATTACHED DEVIATION**



**NOTES:**

1. CO2 REGULATOR IS FACTORY SET. DO NOT ATTEMPT TO ADJUST. IF DAMAGED RETURN TO HELITECH FOR SERVICE.
2. TO FILL CO2 BOTTLE, DISCONNECT -31 FROM TANK. LOOSEN TANK CLAMP AND TURN BOTTLE SO THAT THE NOZZLE FACES OUTWARD AND ATTACH ADAPTER. AFTER FILLING REVERSE PROCEDURE TO REATTACH TANK.

**DART**  
AEROSPACE

190 S. Danebo Ave., Eugene, OR. 97402  
1-800-556-4166  
e-mail: sales@dartaero.com  
dartaerospace.com

TITLE <b>ENGINE WASHER</b>			
DWG NO. <b>HT-300-CW</b>	REV <b>6</b>	CUSTOMER 2 OF 2	
SCALE 1:4	DATE 10/15/2014	SHEET	29 OF 29

Entered: \_\_\_\_\_ Date: \_\_\_\_\_

## WORK ORDER NON-CONFORMANCE / ROUTE UPDATE



NCR No. \_\_\_\_\_

Route update only ☐

Job: _____  Part No. HT-300-CW REV. 6		<b>DISPOSITION</b>  Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/>		<b>DEPARTMENT/PROCESS</b>  <div style="display: flex; justify-content: space-between;"> <div>           Skid-tube <input type="checkbox"/>            Machining <input type="checkbox"/>            Large Fab <input type="checkbox"/> </div> <div>           Cross tube <input type="checkbox"/>            Small Fab <input type="checkbox"/>            Finishing <input type="checkbox"/> </div> <div>           Eng. (Non-AW) <input checked="" type="checkbox"/>            Prod. Eng. Coord. <input type="checkbox"/>            Rec/Store/Packaging <input type="checkbox"/> </div> <div>           Engineering <input type="checkbox"/>            Water Jet <input type="checkbox"/>            Supplier <input type="checkbox"/>            Quality <input type="checkbox"/> </div> </div>				
Date :		Sequence #:		QTY Affected :		<b>MRB (QSI042)</b>  June 19, 2019		
<b>Description Work Order Deviation</b>				<b>Disposition</b>				
-Part number substitutes are recorded on sheet 2				- The part numbers recorded on sheet 2 of this deviation are acceptable alternatives.  - The fit, form and function of the engine wash kit will be as originally intended.				Completed By
								Lead hand / Supervisor
								QC / QA Coordinator
PER MBB								
<b>Root Cause</b>  Operator <input type="checkbox"/> Manufacturing Process <input type="checkbox"/> Equip/Tooling <input type="checkbox"/> Handling/Presservation <input type="checkbox"/> Material <input type="checkbox"/> Product Improvement <input checked="" type="checkbox"/> Process Improvement <input type="checkbox"/> Human Factors <input type="checkbox"/>		<b>FAULT CATEGORY</b> <div style="display: flex; flex-wrap: wrap;"> <div style="width: 50%;"> <input type="checkbox"/> Pressure/Forced  <input type="checkbox"/> Bending  <input type="checkbox"/> Crushing  <input type="checkbox"/> Cracks  <input type="checkbox"/> Crimp/Kink/Ripple/Wave/Twist  <input type="checkbox"/> Marks/Chatter  <input type="checkbox"/> Mislabeled         </div> <div style="width: 50%;"> <input type="checkbox"/> Contamination  <input type="checkbox"/> Misaligned/off center  <input type="checkbox"/> BOM/Route  <input type="checkbox"/> Broken/Damage/Defect  <input type="checkbox"/> Incomplete/Unclear Instructions  <input type="checkbox"/> Drill Holes  <input type="checkbox"/> Fit/Function         </div> <div style="width: 50%;"> <input type="checkbox"/> Power Loss/Surge  <input type="checkbox"/> Folio/Program  <input type="checkbox"/> Grain Direction  <input type="checkbox"/> Weld  <input type="checkbox"/> Wrong Stock Pulled  <input type="checkbox"/> Out of Sequence  <input type="checkbox"/> Off-set/Set-up         </div> <div style="width: 50%;"> <input type="checkbox"/> Positioned Wrong  <input type="checkbox"/> Outside Tolerance  <input type="checkbox"/> Drawing  <input type="checkbox"/> Finish  <input type="checkbox"/> Part Lost/Missing  <input type="checkbox"/> Misread         </div> </div>						
Other/Details:								



Item #	Description	McMaster Carr	Foxx Equipment	www.ontariobeerkegs.com	www.granger.com (or local supply)	www.acklandsgranger.com (or local supply)	www.southco.com
-1	3 way valve	46095K42					
-3	Gauge (0-100psi)	4089K61					
-5	CO2 Regulator		03G07126				
-7	M-F Check Valve	7768K26					
-9	Regulator (2-125 PSI)	41735K11					
-10	Ring (mounting ring for regulator)	41735K48					
-11	90 deg elbow	50785K43					
-13	1/4" M-M pipe nipple	4568K131					
-15	1/4" F-F pipe coupler	9151K62					
-17	1/4" Tee M-F-F	50785K222					
-19	1/4" Tee F-M-F	50785K322					
-21	1/4" 45 elbow	50785K82					
-23	1/4" plug	50785K221 or equiv					
-25	9/16-18 JIC Plug				2F569	DYE03CP6	
-27	1/4" NPT- 1/4" Barb	91465K91					
-29	1/4" NPT- 3/8" Barb	91465K92					
-31	CO2 Nipple			CGA 320 Nut & Nipple RH			
-33	n/a						
-35	oring	9464K12					
-37	oring	9464K13					
-39	oring	9464K24					
-41	oring	9464K18					
-43	3 gallon tank		15C07-121				
-45	conector for tank with 1/4 hose barb		07C07-138				
-47	conector for tank with 1/4 hose barb		07C07-139				
-49	Ferrule	54105K37	06E04-147				
-51	pick up tube for 3 gallon tank		15C07-201				
-53	1/4" hose (per foot)	5633K21					
-55	3/8" hose (per foot)	5633K23					
-57	CO2 Tank		01F05-103				
-59	oring	9464K44					
-67	placard (Dart supplied material)						
-71	hinge (or Essentra NSH-220)	1582A457					
-77	Barrel Nut	90835A210					
-101	Handle	1856A73					
-103	Latch (non locking)						M1-61
-115	Hose Fitting	53515K12					
-118	double sided tape	76665A89					
-119	placard (Dart supplied material)						

DQA: \_\_\_\_\_ Date: \_\_\_\_\_

**WORK ORDER NON-CONFORMANCE / UPDATE**

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

Work Order: _____  Part No. <u>HT-300-CW &amp; HT-500-CWA</u>  NCR No. _____		<b>DISPOSITION</b>  Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Suspected Unapproved <input type="checkbox"/>		<b>AGAINST DEPARTMENT/PROCESS</b>  <table style="width:100%; border: none;"> <tr> <td style="border: none;">Skid-tube <input type="checkbox"/></td> <td style="border: none;">Cross tube <input type="checkbox"/></td> <td style="border: none;">Water Jet <input type="checkbox"/></td> <td style="border: none;">Engineering <input type="checkbox"/></td> </tr> <tr> <td style="border: none;">Machining <input type="checkbox"/></td> <td style="border: none;">Small Fab <input type="checkbox"/></td> <td style="border: none;">Prod. Eng. Coord. <input type="checkbox"/></td> <td style="border: none;">Quality <input type="checkbox"/></td> </tr> <tr> <td style="border: none;">Thermoforming <input type="checkbox"/></td> <td style="border: none;">Finishing <input type="checkbox"/></td> <td style="border: none;">Rec/Store/Packaging <input type="checkbox"/></td> <td style="border: none;">Other <input type="checkbox"/></td> </tr> <tr> <td style="border: none;">Large Fab <input type="checkbox"/></td> <td style="border: none;">Composite <input type="checkbox"/></td> <td style="border: none;">Supplier <input type="checkbox"/></td> <td></td> </tr> </table>						Skid-tube <input type="checkbox"/>	Cross tube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>	Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>	Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>	Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>																																																	
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Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>																																																																						
Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>																																																																							
Date :		Step #:		QTY Effective :			<b>MRB (QSI042) Approval</b>  April 11, 2018																																																																		
<b>Description Work Order Deviation</b>				<b>Disposition</b>				<b>Completed By</b>																																																																	
- Substitute ARROW R-162 Regulator with McMaster Carr 41735K11 Regulator (2-125 psi)  - Substitute PK-1611 Regulator Nut with McMaster Carr 41735K48 Mounting Ring Nut				- This deviation is acceptable.  - The fit, form and function of the engine wash kit will be as originally intended.				<b>Lead hand / Supervisor Approval Verification</b>																																																																	
								<b>QC / QA Coordinator Approval</b>																																																																	
<b>Root Cause</b>				<b>FAULT CATEGORY</b>																																																																					
<table style="width:100%; border: none;"> <tr><td style="border: none;">Environment <input type="checkbox"/></td><td style="border: none;">No Re-verification <input type="checkbox"/></td></tr> <tr><td style="border: none;">Design <input type="checkbox"/></td><td style="border: none;">Operator <input type="checkbox"/></td></tr> <tr><td style="border: none;">Doc/Data <input type="checkbox"/></td><td style="border: none;">Offset/Setup <input type="checkbox"/></td></tr> <tr><td style="border: none;">Equip/Tooling <input type="checkbox"/></td><td style="border: none;">Supplier <input type="checkbox"/></td></tr> <tr><td style="border: none;">Handling/Pre <input type="checkbox"/></td><td style="border: none;">Training <input type="checkbox"/></td></tr> <tr><td style="border: none;">Material <input type="checkbox"/></td><td style="border: none;">Use for Testing <input type="checkbox"/></td></tr> <tr><td style="border: none;">Internal Transport <input type="checkbox"/></td><td style="border: none;">Poor Information <input type="checkbox"/></td></tr> <tr><td style="border: none;">Tribal Knowledge <input type="checkbox"/></td><td style="border: none;">Rushing <input type="checkbox"/></td></tr> <tr><td style="border: none;">LOA <input type="checkbox"/></td><td style="border: none;">Product Improvement <input type="checkbox"/></td></tr> <tr><td style="border: none;">Substation <input checked="" type="checkbox"/></td><td style="border: none;">Process Improvement <input type="checkbox"/></td></tr> <tr><td style="border: none;">Past Expiry Date <input type="checkbox"/></td><td style="border: none;">Manufacturing Process <input type="checkbox"/></td></tr> <tr><td style="border: none;">Misidentified <input type="checkbox"/></td><td style="border: none;">Past Due <input type="checkbox"/></td></tr> </table>				Environment <input type="checkbox"/>	No Re-verification <input type="checkbox"/>	Design <input type="checkbox"/>	Operator <input type="checkbox"/>	Doc/Data <input type="checkbox"/>	Offset/Setup <input type="checkbox"/>	Equip/Tooling <input type="checkbox"/>	Supplier <input type="checkbox"/>	Handling/Pre <input type="checkbox"/>	Training <input type="checkbox"/>	Material <input type="checkbox"/>	Use for Testing <input type="checkbox"/>	Internal Transport <input type="checkbox"/>	Poor Information <input type="checkbox"/>	Tribal Knowledge <input type="checkbox"/>	Rushing <input type="checkbox"/>	LOA <input type="checkbox"/>	Product Improvement <input type="checkbox"/>	Substation <input checked="" type="checkbox"/>	Process Improvement <input type="checkbox"/>	Past Expiry Date <input type="checkbox"/>	Manufacturing Process <input type="checkbox"/>	Misidentified <input type="checkbox"/>	Past Due <input type="checkbox"/>	<table style="width:100%; 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